Public Utilities

Volume 64 No. 10 November 5, 1959

THE QUODDY PROJECT STIRS AGAIN
By Lincoln Smith

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Area Development by Utilities—New York, Mississippi, Missouri, Texas, and Wisconsin
By C. E. Wright

« »

The Outlook for Bonneville Power Legislation
By Edward R. Lucas

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What the State Commissioners Are Thinking About

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Public Utilities
FORTNIGHTLY

VOLUME 64 NOVEMBER 5, 1959 NUMBER 10

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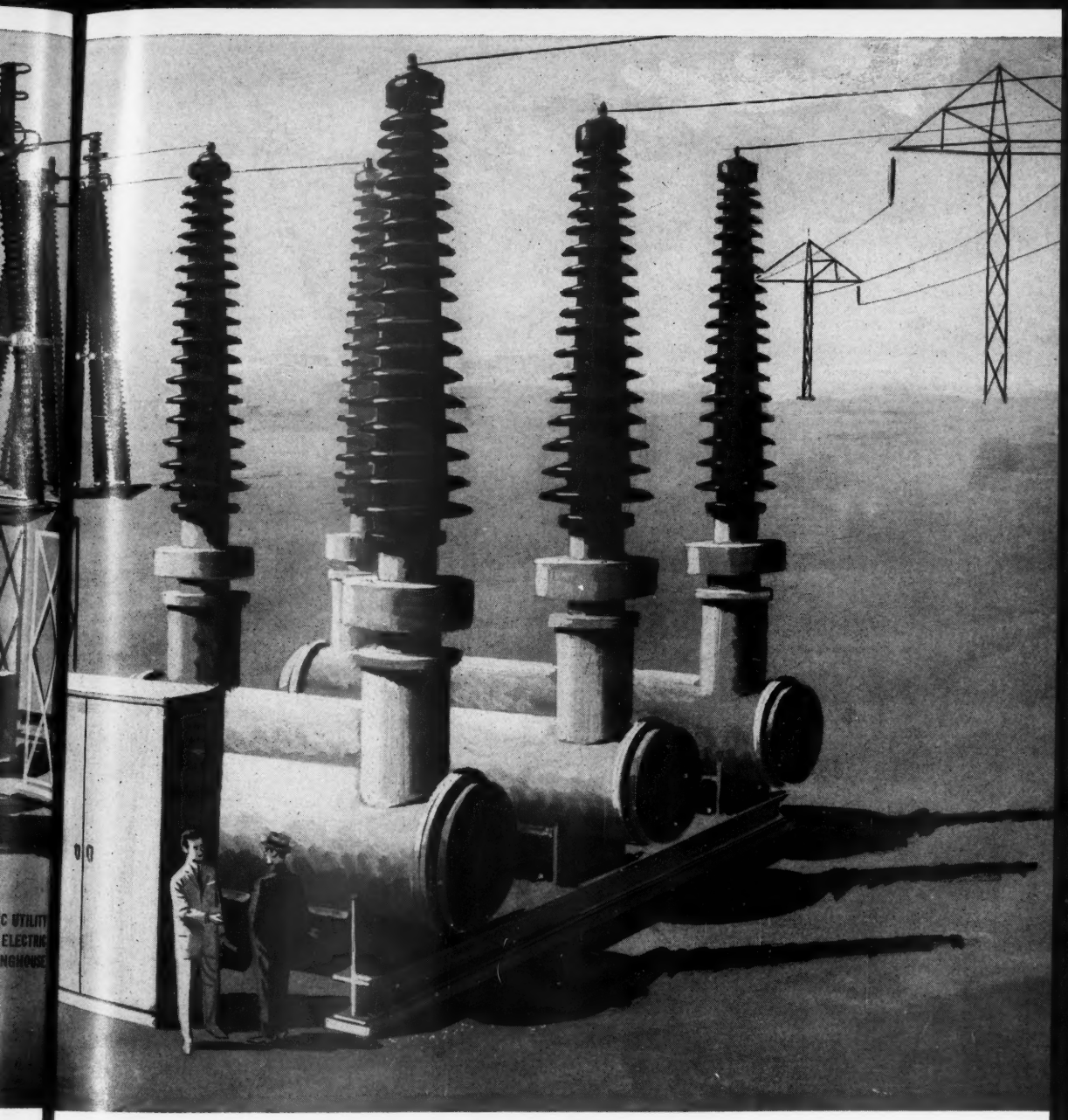

250 kv. Based on this experience, 345-kv apparatus . . . power circuit breakers, transformers, arresters, disconnect switches . . . is in successful commercial operation on hundreds of miles of 345-kv circuits.

advanced laboratory in the Rockies

In 1956, in cooperation with Public Service Company of Colorado, Westinghouse began participating in broad investigation of E-H-V transmission in the Rocky Mountains. This project includes measurement of corona and radio influence and exhaustive switching surge experiments. Conductor size and bundling effects, reduced insulation levels and economics of super-voltages are being studied as a further extension of Tidd tests at 10,000-ft altitudes under violent extremes of weather and temperature changes.

Spending millions to save utilities tens of millions

Building upon this field experience, and many successful commercial applications at 345 kv, apparatus has been further developed at modern test centers throughout Westinghouse—complete high-voltage, high-power test facilities allowing the development of equipment for 690-kv systems.

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Pages with the Editors

IN this day of moon shots and interplanetary probes and interspatial communications, it is hard to find anyone who is incredulous about the future. In fact, it is getting to be hard to find anybody incredulous about what is happening in the present. We have too many instances of science fiction of yesterday becoming the blueprint of today and perhaps the hard fact of tomorrow. And so, it is not surprising to find a hydroelectric project which was laughed off as economic folly in the earlier years of the New Deal now supported by a conservative fact-finding committee as a project worthy of serious consideration by the federal government.

THE reference here is to the idea of developing tidal power production at Passamaquoddy Bay. But it would be erroneous to jump to the conclusion that what is practical today was practical back in the mid-thirties.

THE Quoddy scheme originally sparked the imagination of the late President Roosevelt during his sojourn at the family summer home in that area. He had often gazed at the torrential tides rushing in and out, under the spell of the "sunrise at Campobello," or perhaps it would be better to say moon glow, because of tides.

EDWARD R. LUCAS

LINCOLN SMITH

WHEN the combination of a landslide victory and almost dictatorial economic authority (considering Roosevelt's prestige and vast majority control of Congress at that time) happened to coincide with a period of widespread unemployment, a far less imaginative and impulsive statesman than Franklin D. Roosevelt might well have been tempted. And so it was that $7 million worth of rock foundation was dumped into the Bay of Fundy before the late Arthur Vandenberg of Michigan blew the whistle in the U. S. Senate. The project was abandoned, along with its parallel twin of economic impracticability, the Florida ship canal.

YET the conditions which made Quoddy impractical in the mid-thirties have changed for the better. The conditions which made the Florida ship canal impractical have probably changed for the worse. The increasing demand for power in New England, the increasing efficiency and economy of long-distance power transmission, the completion of the exploitation of more economic hydro sites, and the creation of more power markets, may make Quoddy—as a proposal at least—seem more respectable. Moving in the other direction, marine shipping in this age of air travel and networks of transcontinental

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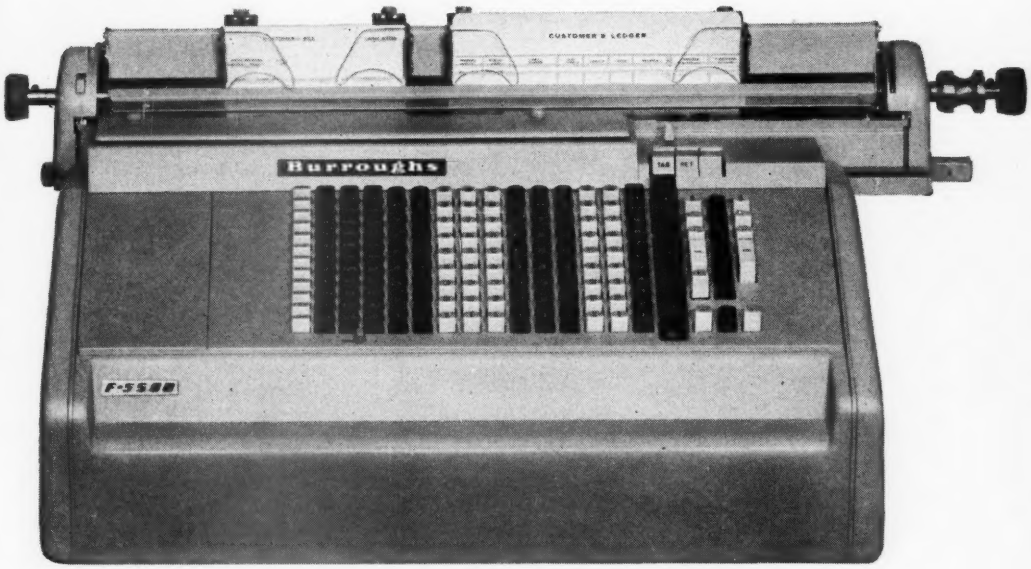

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pipelines has lost its importance from the standpoint of urgency.

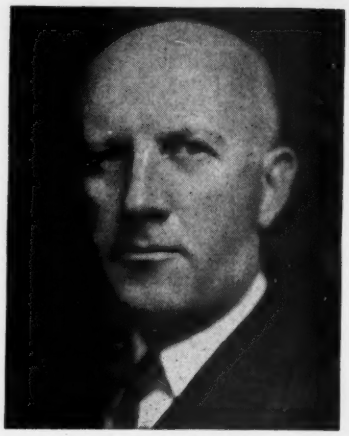
WE noticed just the other day, in one of the consumer magazines, that the 1950 Hudson automobile was comparable to a surprising degree, from the standpoint of appearance, economy, compactness, etc., with the so-called "compact" models which the Big Three auto manufacturers are bringing out today to stave off foreign car competition. The defunct 1950 Hudson was too far ahead of itself in those days of cheap gas and at a time when the "gingerbread men" were in the ascendancy in the automotive designing field. When we consider the tail fins and gas-hog jobs that followed, we have more respect for the independent judgment of that era nearly a decade ago. We seem to have traveled a full circle in auto styling.

THE first article in this issue deals with the Quoddy project and the recent report on the same. It comes to us from DR. LINCOLN SMITH of the New York University faculty, who has written for this magazine frequently, but usually on the subject of professional or occupational backgrounds for regulatory commissioners. But DR. SMITH comes by his knowledge and interest in Quoddy quite honestly. He is a native of Maine and a graduate of Bowdoin College. He took his AM and PhD at the University of Wisconsin and has taught at Yale, Pennsylvania, California (Los Angeles), and now at New York University.

PROFESSOR SMITH has numerous relatives in the Maritime provinces, and he has vacationed there and in Quebec quite regularly for several decades. He has inspected many of the actual and potential power sites in the region. In the summer of 1949 he served as administrative counsel in the preparation and presentation of the case for Quoddy on both sides of the border before the International Joint Commission.

* * * *

THE article beginning on page 766 by C. E. WRIGHT, former industrial magazine editor and free-lance writer of Jacksonville, Florida, deals with actual



C. E. WRIGHT

programs for community betterment and area development being followed by public utility companies in New York, Mississippi, Missouri, Texas, and Wisconsin. This is the second in a series of articles MR. WRIGHT is doing for us.

* * * *

IN our September 24th issue, the editor wrote an article dealing with legislation now pending in Congress to amend the present Bonneville Power Administration Act. In it the proposed federal corporation device was seen as a possible pattern or vehicle of future federal power project developments generally. But what has been the local reaction to this rather far-reaching proposal of Senator Neuberger (Democrat, Oregon) to beef up the authority of the Bonneville Administration by transforming it into a somewhat autonomous federal power corporation? In this issue (beginning on page 774) EDWARD R. LUCAS, Washington state journalist and free-lance writer, tells us what he has found out at the local level as to the reaction of the public and special interests to this proposal. MR. LUCAS is a native of the state of Washington and a graduate of the State University School of Journalism ('34). He has been a free-lance writer for business and industrial magazines for more than a decade.

THE next number of this magazine will be out November 19th.

The Editors

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Coming IN THE NEXT ISSUE

(November 19, 1959, issue)

THE LAW OF GOVERNMENT INTERVENTION

When there is government intervention in the pricing process of economic goods and services, whether it be in the field of traditional public utility controls or other industries not usually regarded as conventional public utilities, there has been noted a tendency to develop new problems in addition to those sought to be corrected by government intervention. We have seen, for example, the piling up of surpluses as a result of crop price supports. We have seen uncertainty and fear in the increasingly competitive area of public transportation in its various forms, by sea, air, and land. Professor of Economics John D. Garwood of Fort Hays Kansas State College has developed from his observations what he calls the Law of Government Intervention. Using the uranium industry as a case example, he traces what he believes to be the inevitable consequences of government price intervention, which seem to be more problems in the end than were found in the beginning of government intervention.

AREA DEVELOPMENT BY UTILITIES—SOUTHEAST, PENNSYLVANIA, AND MICHIGAN

This is the third and final article in the series written by C. E. Wright, former industrial magazine editor and free-lance writer of Jacksonville, Florida, on the subject of actual programs for community betterment and area development being followed by public utility companies. Programs in the Southeast (Georgia and Florida) and western Pennsylvania and Michigan have been analyzed and reported. Particular utility company programs reviewed include Georgia Power Company, Florida Power Corporation, West Penn Power Company and its subsidiaries, and Detroit Edison Company.

THE IMPORTANCE OF UTILITY-HIGHWAY LIAISON

With the recent increase of the federal tax on gasoline by a penny, virtually every citizen of the United States was made personally aware, if he had not already been aware, that his government was engaged in a vast and expensive program of building highways for his convenience and necessity. In every area we see tangible evidence of these programs at the local level in the form of new road and bridge building, old roads torn up, detours, and other signs of highway construction. Sam Houston, chairman of the National Liaison Committee of the American Right of Way Association, as well as a Bell system company attorney, has written a thoughtful article dealing with the importance of utility co-operation with highway authorities to solve right-of-way conflicts, relocation problems, etc., through liaison.

★

Also . . . *Special financial news, digests, and interpretations of court and commission decisions, general news happenings, reviews, Washington gossip, and other features of interest to public utility regulators, companies, executives, financial experts, employees, investors, and others.*

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—MONTAIGNE

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President, E. I. duPont de Nemours & Company.

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ROGER M. BLOUGH
Chairman of the board, United States Steel Corporation.

"I do believe that adequate, continuous, well-financed research is the mustard seed of tangible faith that will help remove obstacles to greater abundance for all, and thus aid in banishing from our land the specter of economic stagnation."

W. A. PARISH
President, Houston Lighting & Power Company.

"It is necessary that an enterprise communicate to all its neighbors its interest in the well-being of the entire community or the area it serves. A company should be deeply a part of the community. It should be respected, admired, understood. It can be with communication—with each individual employee representing the whole company."

EDITORIAL STATEMENT
Los Angeles Times.

"Speculation has a key rôle to play in business, but it is a well-defined one. As Supreme Court Justice Holmes once said: 'Speculation is the self-adjustment of society to the probable.' . . . Therefore the public in every income group ought to heed the present campaign of reputable institutions to advise a good long look before leaping into speculation."

HERBERT HOOVER
Former President of the United States.

"Among the delusions offered us by fuzzy-minded people is that imaginary creature, the common man. It is dinned into us that this is the century of the common man. The whole idea is another cousin of the Soviet proletariat. The uncommon man is to be whittled down to size. It is the negation of individual dignity and a slogan of mediocrity and uniformity."

ARTHUR E. SUMMERFIELD
Postmaster General of the United States.

"We need to relieve this stifling tax load carried by the individual citizen and by our business system. There are over 100,000 taxing authorities in our country. Their weight can literally crush the ability of business to meet its job-creating capital needs. . . . We are in the process of building a more powerful economy, but ironically the very soundness of this economy is threatened by deadly forces that have wrecked other strong nations in the past. These are the forces of inflation and onerous taxation—and the truth is we have not fully united as a people to overcome them. . . . Union members throughout the country have made it clear that they are not in accord with the autocratic decisions of the small group of leaders who exercise national power. They have made it clear they do not want strikes. They have made it clear they want legislation to protect their rights. And the public in general has made increasingly evident its support of these millions of union members."

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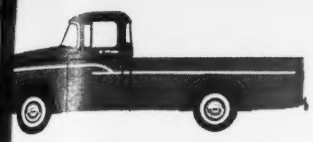
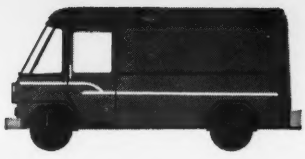


PTLINE pick-ups head their class in looks; in load space, power. 4-wheel-drive optional.



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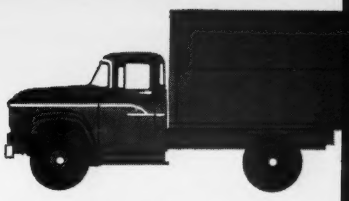
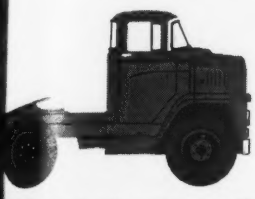


VAN and other special bodies are easily accomm dated by most 1960 Dodge trucks.



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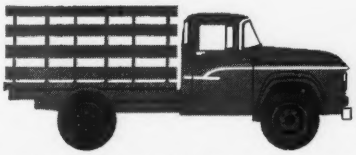
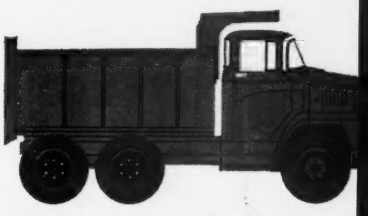


STAKE bodies from 7½′ to 14′ are built by Dodge on models to 19,500 lbs. G.V.W.



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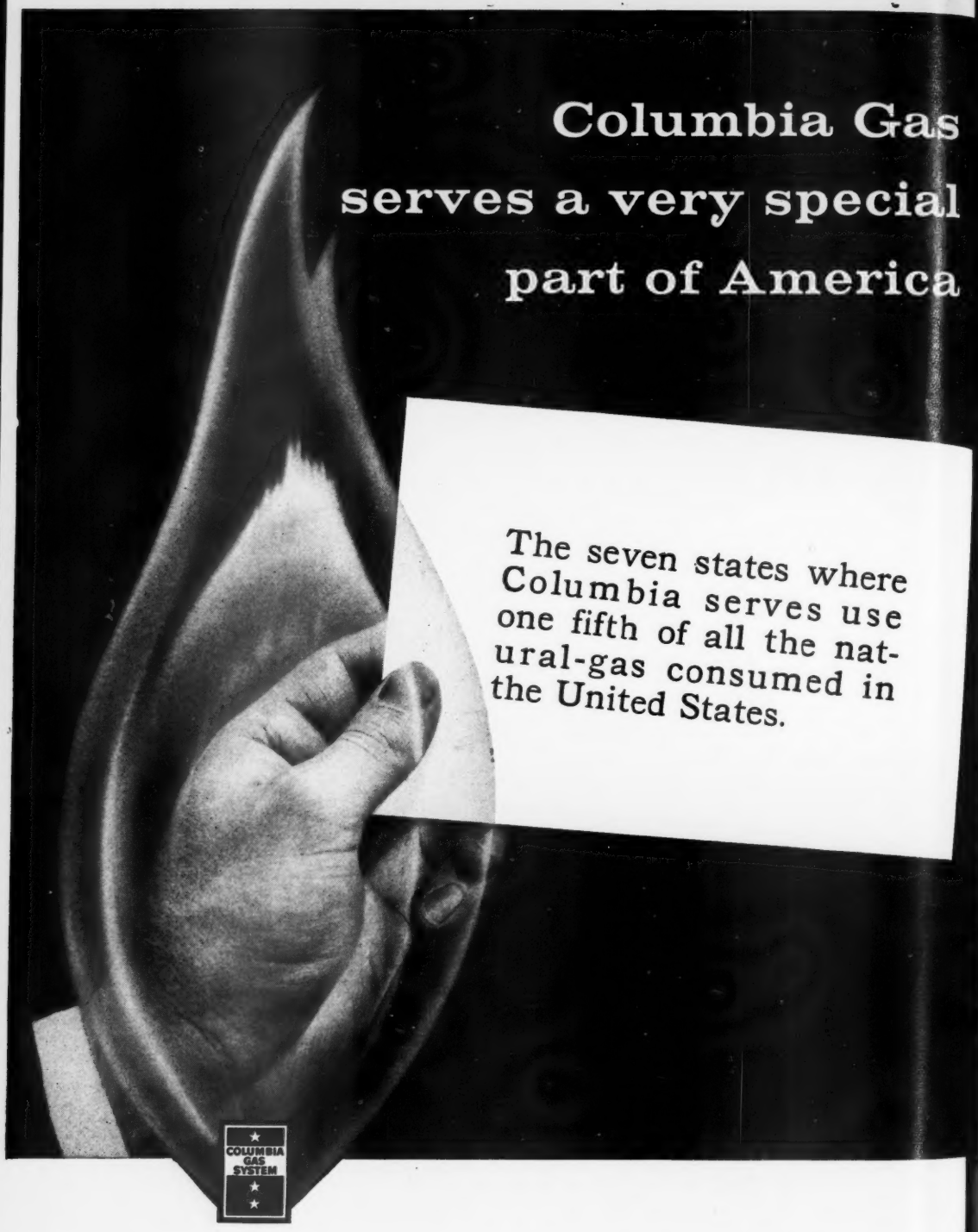
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UTILITIES *A·l·m·a·n·a·c·k*

NOVEMBER

Thursday—5 *Pacific Coast Electrical Association begins Hawaiian conference, Honolulu, Hawaii.*	**Friday—6** *New Jersey Utilities Association ends three-day annual meeting, Absecon, N. J.*	**Saturday—7** *Edison Electric Institute, Commercial Lighting Committee, will hold meeting, Washington, D. C. Nov. 30-Dec. 1.* ***Advance notice.***	**Sunday—8** *Edison Electric Institute, Street and Highway Lighting Committee, will hold meeting, Cleveland, Ohio. Dec. 2, 3.* ***Advance notice.***
Monday—9 *National Electrical Manufacturers Association begins annual convention, Atlantic City, N. J.*	**Tuesday—10** *Alabama Telephone Association ends two-day annual convention, Birmingham, Ala.*	**Wednesday—11** *American Water Works Association, North Carolina Section, ends three-day annual meeting, Durham, N. C.*	**Thursday—12** *American Gas Association begins midwest public relations workshop, Lincoln, Neb.*
Friday—13 *Electric Council of New England ends two-day annual conference, Boston, Mass.*	**Saturday—14** *American Water Works Association, Cuban Section, will hold annual meeting, Havana, Cuba. Dec. 3-5.* ***Advance notice.***	**Sunday—15** *American Water Works Association, Florida Section, begins annual meeting, Tampa, Fla.*	**Monday—16** *Southeastern Electrical Exchange, Sales Section, begins meeting, New Orleans, La.*
Tuesday—17 *Building Research Institute begins fall conference, Washington, D. C.*	**Wednesday—18** *Oklahoma Telephone Association begins annual convention, Oklahoma City, Okla.*	**Thursday—19** *American Gas Association, Managing Committee, begins meeting, Phoenix, Ariz.*	**Friday—20** *Interstate Oil Compact Commission will hold annual meeting, Philadelphia, Pa. Dec. 3-5.* ***Advance notice.***

Courtesy, Northern Natural Gas Company

Another Bite for the Hole

The "roughnecks" are shown connecting another length of drilling pipe before lowering into a prospective well.

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The Quoddy Project Stirs Again

By LINCOLN SMITH*

Recently there was filed with the International Joint Commission, the report of a group of experts from Canada and the United States on the economic as well as the engineering feasibility of the fabulous scheme to harness the tides of Fundy for the production of electricity. The text of this report has not yet been made public. But the release of the salient findings points the way to a revival of international interest, if not positive government action, in this plan which has lain dormant for more than three decades.

THERE apparently has never been any serious question in engineering quarters that the long-debated proposal to harness the torrential tides of the Bay of Fundy, otherwise known as the Passamaquoddy project, was feasible—strictly from an *engineering* point of view. In other words, given unlimited amounts of man power, money, and materials, the engineers have always been sure the scheme would work. They knew that the self-replenishing tides could be trapped, could be made to turn the turbines, and that electricity in substantial amounts could be produced for public service.

But economic feasibility was something else again. At what cost, and with what customers, and in what localities could the power be marketed? It was on this hard rock of economic feasibility that the Quoddy project first foundered back in the days of the first New Deal—after it had been launched with a relatively small down payment of some $7 million worth of rock and other materials, dumped into the estuarial site later abandoned because of opposition in Congress.

At that time, however, the techniques

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of long-distance power transmission, and of earth moving and earth filling in dam construction, and a number of other operations were almost primitive, compared with modern practices. Then, too, the power market potential was vastly different in Maine and surrounding territory in those days. Much more economical and accessible hydro sites were still available and unexplored elsewhere. In short, about the main economic justification for Quoddy in the mid-thirties was as a possible make-work public works project during a period of widespread unemployment —and yet a project which might also eventually prove very useful as a source of power. But nobody was very sure about the latter point.

Story Different Today

TODAY, when power can be transmitted up to 500 miles at voltages approaching a half-million, when explosively increasing demands for power in the whole New England area cry out for more power reserves from any source, it is not surprising that a decision was made to take another long hard look at the Quoddy project from a number of angles —engineering, economic, and the conservation of natural resources, including the possible impact on the fishing industry.

And so it was that the International Joint Commission between the United States and Canada had another expert survey made by two boards, one engineering and one for fisheries. The report of the engineering board has now been filed, and its salient findings released in brochure form. Needless to say, the verdict is awaited eagerly by citizens, government officials, and power experts, both in the state of Maine and the Province of New Brunswick. The report so far made does not reach any verdict. That is the function of the commission itself and will doubtless take additional weeks in the making, probably preceded by hearings, etc. But on the basis of the factual engineering report, we can say at least that the prognosis is favorable.

If the final verdict is favorable, it will have important repercussions throughout northern New England and two or three Maritime provinces. The findings to date have international significance because they involve territorial waters between the United States and Dominion of Canada. In addition, the scientific world is concerned, because dams to harness tides averaging 18 feet would bring to reality a mammoth experiment in tidal power.

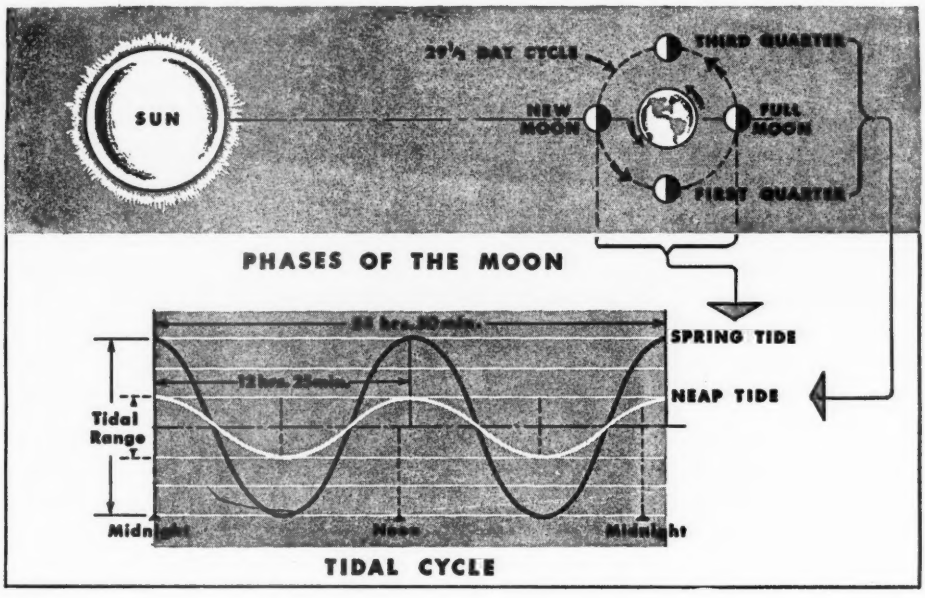
Genesis of the Plan

THE idea of tidal power is not new. Small tidal mills for grinding corn have been used in Western Europe for over 500 years. Slade's mill at Chelsea, Massachusetts, built in 1734, developed 50 horsepower with four water wheels worked by a simple dam entrapment of high tides. Nor has consideration of its possibility for large-scale development been confined to Fundy, where the late American engineer, Dexter P. Cooper, drew up plans forty years ago—later supported by the late Franklin D. Roosevelt, who personally witnessed the 18-foot average tides from his summer home at Campobello.

Most readers have, perhaps, seen pictures if not the original setting of Mont St. Michael's, that beautiful rock-bedded

church near St. Malo in France. At high tide it is surrounded entirely by water and at low tide the churchgoers may easily walk from the mainland. The mouth of the Severn in England and the Gulf of San Jose in Argentina, and other places on the coast of Brittany feature tremendous tides. But nowhere are the possibilities of man-made entrapment so fortunate on such a vast scale as on the nearly landlocked Bay of Fundy.

The bare mechanics of tidal power production are deceptively simple. On a one-pool basis, a gate across the estuarial open-



Advantages of Tidal Power

THE advantages of a tidal power plant are that the tides, which can be predicted with accuracy for many years in the future, can produce power unaffected by droughts, floods, ice jams, or silting—adverse factors which decrease the output and limit the life of river hydroelectric plants. As shown in the simplified illustration, the sun and moon appear on the same side of the earth approximately every four weeks, at the time of new moon. Two weeks later, at the time of full moon, the sun and moon appear on opposite sides of the earth. When either of these conditions occurs, gravitational attraction of the sun and moon reinforce each other and cause maximum or spring tides. When the moon is at either quarter phase, the gravitational attraction of the sun and moon are approximately at right angles with respect to the earth, causing minimum or neap tides. When the moon is new or full and simultaneously in perigee—the point in the moon's orbit closest to earth—the spring tide is particularly great.

ing traps a high tide and discharges it through turbines to the ocean. Conversely, at low tide the empty pool may be supplied from the ocean at high tide through the turbines. On a two-pool basis, a more regular and better-controlled force of production at the site can be established by filling one pool at high tide with the other empty at low tide, discharging the high pool through the turbines.

THE report of the Passamaquoddy Engineering Board (hereafter called the Report) not only found the two-pool system more practical but also suggested the additional combination of hydroelectric development on the upper Saint John river in Maine. The Report concluded on this point:

(1) A tidal power project using the waters of Passamaquoddy and Cobscook bays can be built and operated. The two-pool type of project is best suited for the site conditions in the area and the power markets it would serve. The tidal project arrangement selected makes best use of the site conditions.

(2) The first cost (construction cost) of the tidal power project by itself would be $484 million. With interest during construction, the investment would be $532.1 million. The tidal power project would have an installed capacity of 300,000 kilowatts and a dependable capacity of 95,000 kilowatts. Average annual energy would be 1,843 million kilowatt-hours. However, for maximum power benefits, the tidal power project would have to be combined with an auxiliary power source.

(3) The most favorable project combination is the tidal power project operated in conjunction with a river hydroelectric auxiliary built at the Rankin Rapids site on the upper Saint John river in Maine. The combined cost of the tidal project and the Rankin Rapids auxiliary is $630 million. With interest during construction, the investment would be $687.7 million. The dependable capacity of this combination would be 555,000 kilowatts, and average annual generation would be 3,063 million kilowatt-hours.

(4) Construction of the tidal project-Rankin Rapids combination would increase low flows in the lower Saint John river by a considerable amount, thus increasing substantially the usefulness of the river for downstream generation of power. Downstream benefits accruing to existing power plants were included in the economic evaluation.

(5) The combination of the tidal project and the installation and use of 260,000 kilowatts of capacity only at Rankin Rapids for firming up the output of the tidal power project would cost $515.5 million. With interest during construction, the investment would be $565.7 million. This combination would provide a total dependable capacity of 355,000 kilowatts and an average annual generation of 1,843 million kilowatt-hours.

AS a possible alternative to the full-scale development of the Rankin Rapids auxiliary project, Rankin Rapids could be used as a reservoir to carry part of the load in Maine, adding generating capacity as needed. The Rankin Rapids project, with 2.8 million acre-feet of storage, would also regulate the flow of the Saint

John river, benefiting hydro installations there.

But the Report also suggested supplementing the tidal power by means of a pumped-storage plant. By using tidal power at periods not needed to meet load demands, water can be pumped electrically to higher storage points for subsequent release.

THE three most favorable pumped-storage sites were investigated and a site on the Digdeguash river near its outlet to Passamaquoddy Bay east of St. Andrews, New Brunswick, was adopted for design. Usable storage would amount to 204,000 acre-feet, equivalent to an output of 28 million kilowatt-hours. A loss of about 114 million kilowatt-hours of tidal energy a year in the pumping and generating cycles would be partially offset by 30 million kilowatt-hours a year of fresh-water inflow from the Digdeguash river drainage area.

Using 400 million kilowatt-hours of energy from the tidal plant for the pumping cycle, the annual energy generation of the Passamaquoddy tidal plant-Digdeguash combination would be 1,759 million kilowatt-hours.

The Overall Cost Prospects

ACCORDING to the Report, the tidal power project and the Digdeguash pumped-storage auxiliary would cost $518.5 million. With interest during construction, the investment would be $568.9 million. The dependable capacity would be 323,000 kilowatts, and average annual generation would be 1,759 million kilowatt-hours.

The total output from the tidal power project and Rankin Rapids hydroelectric plant can be absorbed readily by the growing utility markets of Maine and New Brunswick.

The Report gave some interesting conclusions as to costs on all of the foregoing combinations, as follows:

> Because of differences in interest rates prevailing in the two countries, and because of different values of alternative power, it was necessary to compute separate benefit-cost ratios for United States and Canada. Economic evaluations, assuming 50-year and 75-year amortization periods, and assuming that power output and project first cost would be equally divided between the United States and Canada, are tabulated below:

	50-Year Amortization		75-Year Amortization	
	Benefit Cost Ratio	*Cost Per Kwh. (Mills)*	*Benefit Cost Ratio*	*Cost Per Kwh. (Mills)*
Tidal project alone				
United States	0.60	10.8	0.70	9.3
Canada	0.34	14.9	0.37	13.7
Tidal project and all of Rankin Rapids				
United States	1.31	8.4	1.53	7.2
Canada	0.58	11.5	0.63	10.6
Tidal project and incremental capacity only at Rankin Rapids				
United States	0.93	11.5	1.08	9.9
Canada	0.42	15.8	0.45	14.5
Tidal project and Digdeguash pumped-storage auxiliary				
United States	0.91	12.2	1.06	10.5
Canada	0.42	16.8	0.46	15.4

The inclusion of taxes foregone with project costs is not the practice in the economic justification of public projects in Canada, and due to the international nature of the project, such taxes have not been applied to United States' costs. However, if they were included in United States' costs, the benefit to cost ratio of the most favorable project combination would be reduced to 1.10 for the 50-year amortization period and to 1.25 for the 75-year period.

Economic Justification

THE findings of the Report on economic justification are conditioned on the division of power between the United States and Canada. Then, too, there is the fisheries problem to be considered. The Report finds on this, in summary, as follows:

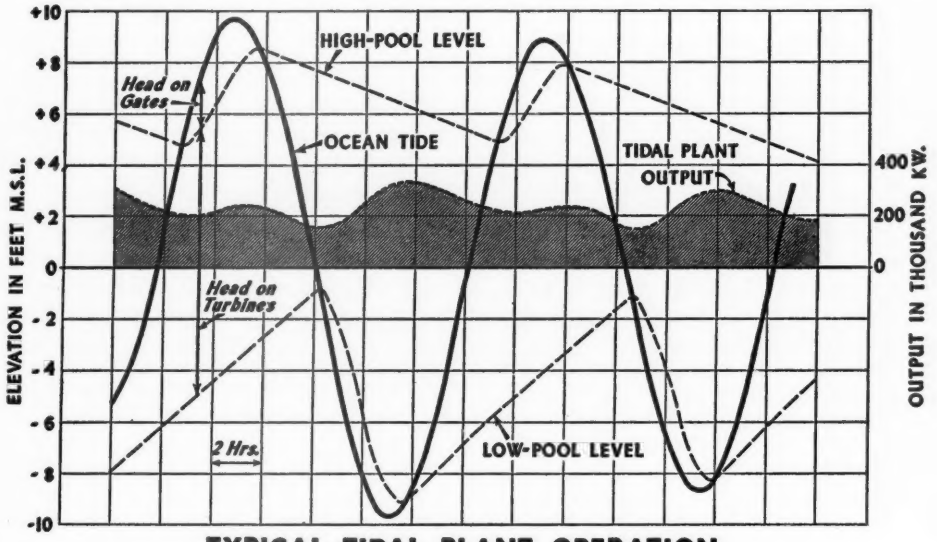
> By including appropriate remedial measures in the design of the tidal power structures, the construction, maintenance, and operation of the tidal power project would have only a minor residual effect on the fisheries of the region.
>
> Considerable annual recreation benefits would grow out of the construction and operation of the tidal power project. However, the monetary value of these benefits was not included in the economic evaluation.
>
> Assuming an equal division of power output and of first costs between United States and Canada, construction of the tidal power project with all of Rankin Rapids as auxiliary is not an economically justified project for Canada.
>
> The Passamaquoddy tidal project and Rankin Rapids combination, if built entirely by the United States at an interest rate of 2½ per cent, is economically justified.

The inquiry inaugurated by IJC assigned the work among the United States Army Engineers, the Federal Power Commission, the New Brunswick Electric Power Commission, and other public and private agencies. On the basis of conclusions of the two expert (engineering and fisheries) boards, the IJC will next present its recommendations to the respective governments. The engineering report, as stated, was submitted to the October meeting of the IJC.

ONE phase of the inquiry went to Brown and Root Marine Operators, Inc., of Houston. Its task was to ascertain the type of soil under the bed of the ocean. The mandate required the company to produce "corings" or samples of the different strata under the bay to determine its strength as a foundation for dams to hold back water supplied by the tides.[1]

Another facet of the survey consists of an economic survey of Maine by the Arthur D. Little Corporation of Boston "to determine all possible potential uses for Quoddy power." The job assigned to this company has been to study and report on the probable economic impact of the project area within which the impact will be felt. The best statement of the basis for evaluating Quoddy is as follows:

Accordingly, the economic justifica-



TYPICAL TIDAL PLANT OPERATION

Report Findings on Area Market

TOTAL kilowatts of capacity required in addition to that scheduled for installation in the near future to meet the growing utility loads in Maine and New Brunswick, considering reserves and retirements, is shown in the following table:

Year	Maine	New Brunswick	Total
1965	200,000	28,000	228,000
1970	405,000	135,000	540,000
1975	650,000	258,000	908,000
1980	955,000	427,000	1,382,000

Thus, the power market surveys revealed that the need for additional capacity to meet future demands in both Maine and New Brunswick could readily absorb by 1980 the 555,000 kilowatts of dependable capacity from the Passamaquoddy tidal plant and the Rankin Rapids hydroelectric plant on the Saint John river, the largest project combination studied.

> tion of the Passamaquoddy tidal project will depend upon whether the tidal power project is more economical than other available methods for developing power. The degree of economic justification will be measured by the ratio of annual costs to annual benefits. Benefits . . . will be determined by comparing its power cost with the cost of generating an equivalent amount of power by cheapest alternate means, probably a steam-electric plant.[2]

BOTH the Army Engineers and Federal Power Commission have vouched for the engineering feasibility of Quoddy. But the engineering announcements previously assumed the undetermined factor of the cost of the project and of the resulting power therefrom, simply because nobody could state authoritatively the cost per unit of the power. There were estimates galore, but none were scientific—all were subjective and many were no more than hunches. Friends of Quoddy claimed that it could produce power between two and three mills per kilowatt-hour; foes contended it would be five or six times that amount and that power generated from coal or oil would be more economical.[3] Many unknown qualities then existed. A few imponderables still remain, but the Report will fill the greater part of the vacuum on these differentials.

When the final verdict is released by the IJC, constituted political authority in both countries then will have a sound basis on which to determine public policy in a very significant region.

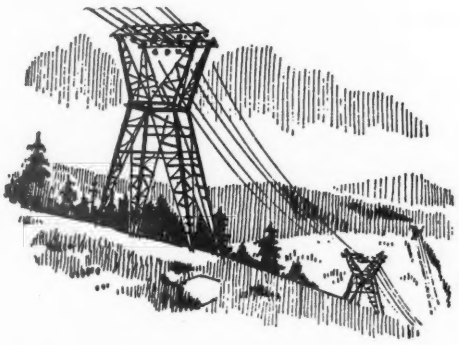
Résumé of "Quoddy"

A CAPSULIZATION of recent Quoddy history brings this article into focus. On authorization by President Roosevelt but without specific approval by Congress, U. S. Army Engineers began construction of dams at Quoddy as part of the emergency relief program in 1935. This was confined to a small area entirely within boundary waters of the United States. At that time Canada was not interested. The All-American plan was intended only as a temporary expedient, with a full understanding that the power dams could be justified only with the co-operation and participation of Canada. Friends of Quoddy believed that the Canadians could be induced to join once Quoddy materialized. Then it could be converted into an international project capable of doubling its power output at relatively small additional cost. But work was stopped in 1936 when Congress failed to provide funds.

In the summer of 1949, the International Joint Commission, which has jurisdiction over boundary waters, held public hearings at St. Andrews, New Brunswick, and Eastport, Maine, on the advisability of a joint government survey of the practicability of the international project. The next year the Army Engineers estimated that an overall comprehensive investigation would cost $3.9 million, and would require three years for its consummation. Subsequently, this estimate was reduced to $3 million, the reduction being due to the use of "sonar" electronic depth sounding which would simplify foundation explorations.[4]

THE Maine delegation in Congress tried unsuccessfully in 1953 to obtain passage of a resolution to authorize the survey. In 1955, however, $3 million were

raised and appropriated for a comprehensive study by the IJC. It directed the Secretary of the Army, the Federal Power Commission, and other governmental agencies to assist, and the IJC was directed to report the results to Congress and Parliament. Although numerous provincial officials in New Brunswick have shown interest in Quoddy since its inception, the government at Ottawa remained indifferent. But a change in attitude gradually emerged. Late in 1952 our Department of State reported that Canada was willing to grant permission for a survey in her waters, but would not contribute to the expense thereof. Three years before, however, Canada had contributed her half of the $60,000 for the 1949 hearings before the United States provided its share. In 1956 the Foreign Secretary of the Canadian Parliament said that if the United States "wishes to request the [IJC] to undertake a survey, the Canadian government would be prepared to give sympathetic consideration to a proposal for a joint reference to the commission by both governments." A joint reference would have the effect of indicating that Canada is interested and co-operative and not merely giving reluctant consent. The joint reference was made in August, 1956. Canada agreed to spend up to $300,000 and the United States up to $3 million for the inquiry. This 10-to-1 cost ratio had no relationship to sharing any power that may be produced.



Need for Quoddy Power Has Increased

TWENTY-FIVE years ago markets for the estimated 1 million horsepower from Quoddy were highly speculative in a rather remote and sparsely populated agrarian region in the Northeast. Today that situation is altered; and the availability of adequate demand for the potential current no longer is questioned seriously. Of great significance is the fact that in recent years the growth demand in Maine has been for firm power, best produced by steam installations. Quoddy, unlike ordinary hydro dams, would develop much primary power, because tides are, within known ranges, relatively constant and predictable—unaffected by drought. By means of interconnections, this current could supplement many lines of utility companies, when needed; likewise, it could furnish large blocks of power for industrial uses twenty-four hours a day.

As chairman of the Maine Public Utilities Commission in 1956, Sumner T. Pike told a New Brunswick legislative committee that "Maine's power needs were growing by 10 per cent a year, that there was immediate need for such power as Quoddy might produce, and that he estimated Maine alone could use and would buy two-thirds of the Quoddy power output." Mr. Pike, former commissioner and acting chairman of the U. S. Atomic Energy Commission, gave expert testimony in Canada on the prospect of use of atomic energy for industrial power. Present cost is prohibitive.[5] It will be many more years before productive costs will make atomic energy a competitor of electricity. At the same hearing, his brother, Moses B. Pike, briefed the Canadians on numerous engineering aspects of Quoddy in which they were interested.[6]

THE official report from the Maine Public Utilities Commission sustains Mr. Pike's prediction on power demands:

> The generating capacity of the electric companies of Maine has been substantially increased during the past few years, thus assuring an adequate source of growth energy for the immediate future. The Central Maine Power Company increased their total steam plant capacity by approximately 60 per cent. . . . The Bangor Hydro-Electric Company added . . . to their steam plant at Veazie. This 10,000-kilowatt unit increased their nonhydro capacity to 48,500 kilowatts, thereby providing ample generating reserve during periods of low hydro output. The Maine Public Service Company has been able to provide for very rapid growth by means of purchased power from New Brunswick. A new 69-kilovolt transmission line was constructed to transport this power to their load center.[7]

A final development on this geographical segment of the international power scene was the abrogation of Maine's power embargo law in 1955.[8] For forty-six years until then it was illegal for any Maine corporation to transmit hydroelectric power to any other state or province. Removal of this state barrier to interstate and foreign commerce in hydroelectricity paves the way for international exchange of power and for the operation of power pools by public and private corporations under the laws of contract. Although Quoddy was specifically exempted from the nontransmission law, its repeal helps to set the stage for commingling of hydro and steam current on a grid system serving a natural geographic region regardless of political bounds.

Canada's Power Situation

THE power situation in eastern Canada offers many contrasts with those of Maine. On the other hand, New Brunswick and Nova Scotia have many affinities in power production and administration. It is significant to note that in March, 1957, "Water power accounts for only about half of central electric station capacity in Nova Scotia and New Brunswick . . . and is of little significance in Prince Edward Island."[9] Unlike Maine, the provinces are receptive to public power. An important survey in New Brunswick indicated: "One-half of the fuel-using capacity and three-quarters of the hydro capacity are privately owned, the remain-

der being owned by the New Brunswick Electric Power Commission."[10] This going and growing concern is a public agency operating adjacent to the Quoddy area. The commission of seven men report annually to the Lieutenant Governor of the Province. Nova Scotia, likewise, is served by some public and municipally owned and operated plants in close proximity to business-managed utility corporations.

Many power plants operated as single and isolated units; interconnections were rare and developed slowly. Until recently storage basins were meager. But the entire fabric is in the process of modernization. Some newer and larger sources are 50 per cent more efficient than older and smaller ones. Not only are public and private sources being integrated but also plans soon will become effective for an interprovincial power system, predicted by the writer more than a decade ago.[11]

THE utilities in New Brunswick and Nova Scotia will, in late '59 or early next year, operate a power pool by means of a new interprovincial grid system. Four public and private companies are participants in the plan. "It is also quite probable that, later, Prince Edward Island may enter the integrated system via submarine cable or the proposed causeway across the Northumberland Strait."[12] Thus, greater use will be made of the most efficient generating units, relegating the less productive ones to auxiliary status. Hence, if Quoddy is built, the impact of its energy will be extensive, possibly to a noncontiguous portion of North America.

UNTIL recently, consumer demands on the New Brunswick Electric Power Commission increased at the rate of approximately 10 per cent per year, or the total amount of current doubled every seven and a half years. Now the increase is accelerated. Previously most of the sales were to domestic customers, as heavy industry, such as the pulp and paper companies, generated their own electricity. A new trend has developed, however, as industry began looking to central stations for expansion facilities. Added sources of supply include the Beechwood hydro development on the Saint John river (135,000 horsepower)[13] and extension of a steam plant at Chatham—a 29,500-horsepower turbogenerator, the largest and most efficient thermal unit in this Province. The minimum forecast of New Brunswick's power needs for 1985 is 5,586 kilowatt-hours; the maximum forecast for that year is 11,880 kilowatt-hours. The conservative estimate is that power demands will be quadrupled in thirty years, based on consumption of 1,349 kilowatt-hours in 1955.

THE Atlantic Provinces Economic Council, serving the Maritimes—New Brunswick, Nova Scotia, and Prince Edward Island—and Newfoundland, is concerned about the dearth of hydroelectricity in its area. It is interested, among other things, in "reducing the cost of power and in making more efficient use of existing resources."[14] A staunch backer of this group since its inception argues "that industrial decentralization from Ontario and Quebec is needed . . . [and] that a program of federal capital aid be aimed at expanding the basic economy of New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland."[15]

WITHOUT specific reference to Quoddy, the incisive report on the New Brunswick economy found that "extensive use of low-cost electricity is the key" to industrialization. A feature article in a splendid regional magazine under the caption "Power Is the Key" is based on Quoddy.[16]

Here is a significant conclusion on the power situation:

> Britain and the United States have caught the vision of the regional development of economically backward areas of the world. It might be that the federal government of Canada will catch the vision of its opportunity to elevate the status of life in New Brunswick by assisting the financing of the electrification so as to ensure power being produced at the lowest cost, and thereby economically enriching all Canada.

The Maritime Provinces Board of Trade also is vitally concerned about questions of power. At the annual meeting at Saint John, New Brunswick, in July, 1959, hope was expressed for a favorable report on Quoddy and for intense industrialization of the area. Likewise, the New Brunswick Council of Labor, anxious to build domestic industry there, has advocated progressive action on Quoddy. Interest has come from individuals at the University of New Brunswick, Dalhousie University and its Institute of Public Affairs, and Queen's University in Ontario. Boards of trade in several cities, such as Fredericton, Saint John, and Saint Stephen, and the Charlotte County Council at Saint Andrews, have agitated aggressively for the Quoddy project for many years.

Others, Too, Have Pushed "Quoddy"

IN Maine, the Washington County Chamber of Commerce took up the cudgels for Quoddy a long time ago, and leading business and professional men have devoted time, money, and talent in pushing the reform, individually and through concerted action of service clubs. Industrial and commercial concerns, and state agencies such as the Maine Development Commission, have worked for the project. Maine political leaders of Republican and Democratic vintage have worked earnestly for Quoddy for more than two decades. Many state legislators, governors, and the Maine delegation in Washington (three Congressmen and two United States Senators) have staged periodic debates in the interests of tidal power. Once, in 1926, the voters of Maine promoted the cause at a public referendum. So have college presidents, journalists, and labor leaders. On several occasions, the president of the Maine Central Railroad has taken the stump for Quoddy, and some of the power companies have had high officials speak in favor of an expert cost analysis. As a whole, however, the Maine power companies have been unenthusiastic about Quoddy. It is a potential source of competition. The power committee of the New England Council has rejected the idea.[17] Scattered elements of opposition are, or have existed, within the Department of State, Federal Power Commission, and, of course, Congress. But individuals in the Interior Department have been receptive.

To adjust differences between public and private power in the United States in this field, a compromise has been suggested.[18] Quoddy could be operated from

the American side not as a public entity but as a subsidiary of one or two of the Maine power companies, if they should be willing to enter into an agreement. To date this plan has not generated much receptivity. Because eastern Canada accepts public power and Maine has not, and because Quoddy is essentially a public power site, the most support in favor of Quoddy recently has emerged from Canadian sources.

The constituted institutional setup for the Quoddy report is an admirable hierarchy in laymen-expert relationships provided no single category of the various segments of professional expertise becomes dominant. The contributions of engineers, economists, and other specialists will be collated and weighed by the members of the International Joint Commission. Theirs will be a composite verdict and recommendation, depending upon the perspective of the members. Their best judgment will be transmitted as advice from an international administrative agency to the highest national legislative authority in Canada and the United States.

The factual elements of the engineering report will be invaluable to both governments regardless of the outcome. If Quoddy should be classified as a marginal power project for the present, the data will be subject to reinterpretation later. Many of the marginal power sites of today are the practical ones of tomorrow. But it is probably that Quoddy can be adapted into an integral part of a greater St. Lawrence seaway.

Footnotes

[1] "Atomic *versus* Maine Power Costs Today," by Harold J. Boyle, Portland *Press Herald*, April 21, 1957.

[2] "Passamaquoddy Tidal Power. A New Source of Energy," by Alden K. Sibley, U. S. Army Engineers, Boston. Presented at annual meeting of the American Society of Civil Engineers, New York, October 14, 1958.

[3] *"The Power Policy of Maine,"* by Lincoln Smith (Berkeley, 1951), pp. 265-270.

[4] "Passamaquoddy Drama," by Herbert J. Seligman in *Down East*. The Magazine of Maine. June, 1956, p. 30.

[5] Pike hinted that the two atomic-powered submarines "may be paying as much as 30 or 40 cents a kilowatt-hour for the electricity that propels them. That compares with an average charge of about three cents a kilowatt-hour in Portland homes. The two submarines can afford to pay more for their power, Pike said, although he thinks the 30- to 40-cent charge is a luxury that only the government can afford." Boyle, *op. cit.*, note 1, *supra*.

[6] "It is only fair to say however that the project may have great and probably destructive effect upon any fish *living within the project area* as the whole marine environment will be changed. Outside of the project area, my opinion is that the project will have little or no effect." "The Flowing Treasure in 'Quoddy Bay," by L. K. Ingersoll, in *The Atlantic Advocate*, Fredericton, New Brunswick, October 1956, p. 49.

[7] Eighteenth biennial report of the public utilities commission of Maine, 1957-58, pp. 12, 13.

[8] "The Repeal of Maine's Power Embargo," by Lincoln Smith, in PUBLIC UTILITIES FORTNIGHTLY, February 2, 1956, pp. 150-160.

[9] *"Canada's Energy Prospects,"* by J. H. Dales. Canadian Institute of International Affairs. (Toronto, 1957), p. 10.

[10] The New Brunswick Economy. Brief to the Royal Commission on Canada's Economic Prospects (Fredericton, 1955), p. 36.

[11] The author's testimony before the International Joint Commission in Maine and New Brunswick, August, 1949.

[12] "Sharing Surplus Electric Power," by W. A. Dixon, in *The Atlantic Advocate*, Fredericton, New Brunswick, August, 1959, p. 51.

[13] New Brunswick's Beechwood (Fredericton, 1956), by H. W. Macdonald, in *The Atlantic Advocate*, July, 1958, pp. 15-20.

[14] *Commercial Letter*. The Canadian Bank of Commerce (Toronto, February, 1956), p. 4.

[15] "Mike Wardell's Tempestuous Love Affair with the Maritimes," by Lawrence Earl, in *MacLean's*. Canada's National Magazine. February 28, 1959, pp. 26, 27, 33-38.

[16] By L. K. Ingersoll and R. E. Tweeddale, Parts I and II, in *The Atlantic Advocate*, October, 1956, pp. 47-56. Other tidal projects were suggested for Canada. See also, "Power Is the Key in New Brunswick," by W. A. Dixon, in *Ibid.*, November, 1956, pp. 31-39.

[17] Power in New England. Report of the Power Survey Committee of the New England Council. (Boston, 1948).

[18] Smith, *op. cit.*, p. 258.

Area Development by Utilities—

New York, Mississippi, Missouri, Texas, and Wisconsin

The efforts of various utilities to improve the communities that they serve make a story that is both dramatic and inspiring in the amazing results that have been achieved. Area development might appropriately be called, "Public Relations on the March."

By C. E. WRIGHT*

How to do the most effective job in community betterment has been the subject of intensive study by many of the investor-owned public utilities. Some have followed, in part at least, the programs suggested by the area development committee of the Edison Electric Institute. Others have developed their own programs, tailored to meet the problems and opportunities of their own service areas. Some, whose service areas are largely metropolitan urban centers, confine their work to assistance to and co-operation with other organizations rather than going it alone.

The Niagara Mohawk Power Corporation, which serves 22,000 square miles of upstate New York, is one of the companies that has done an outstanding job in this field. In fact, its booklet, titled "The Key to Our Community's Future—A Citizen's Planning Guide for Upstate New York Communities," became the prototype for one that the Edison Electric Institute has published for national distribution.

"The comprehensive, long-range development plan is fast becoming the mark of the progressive community in upstate New York, and throughout the nation," says Niagara Mohawk in some of its advertising. "Community planning is gaining

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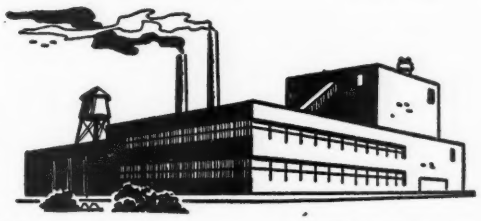
importance on the manufacturers' list of site selection factors . . . is increasingly vital in developing and preserving the kind of home town we want to live in."

IN community planning, which in the Niagara Mohawk program is closely interrelated with industrial development, its area development department advises and assists community leaders in (1) creating citizen interest in a community planning program to encourage authorization of a master plan; (2) developing citizen understanding of the elements of community planning and its importance; (3) developing citizen understanding and support of planning projects already under way.

One of the initial steps in creating community interest in a planning program is the showing of moving pictures bearing on the subject. In addition to distributing copies of the film, "Gold Mine on Main Street," for showing to local groups by its district offices, Niagara Mohawk has also made good use of a film titled "Plan for Prosperity," which was produced in co-operation with sixteen other electric utilities, the American Society of Planning Officials, and the American Institute of Planners. Both of these films have been shown to public officials, chambers of commerce, planning commissions, school boards, service clubs, and other organizations which take an active interest in their own communities.

"OUR community development efforts," says Allen Lynch, area development analyst, "are to encourage and assist in the balanced, sound, and orderly development of the residential, commercial, and industrial complex of our communities throughout the more than 22,000 square miles of the area we serve. The form that this assistance has taken has been: To devote the department's efforts to helping communities to help themselves; to bring the company's program to the attention of civic and industrial development leaders. This department, in close co-operation with our commercial department, sets up educational meetings throughout the system. More than 500 key individuals participated in 61 such meetings conducted in 40 communities in the last eight and a half months of 1958. These individuals included thirty-three presidents of chambers of commerce or similar organizations and thirteen mayors. Several other sessions were held with statewide and regional business and planning groups."

One of the measures of the success of Niagara Mohawk's program has been the enormous amount of publicity obtained in cities and towns throughout the system. A follow-up for the initial interest aroused is a district area development handbook, which has been placed in the hands of every manager in the system. This handbook serves as an aid for local development groups and makes the district manager a primary source of information on the subject. The handbooks are kept up to date by periodic mailings from the home office.



Pointers on Area Development Planning

IT is the experience of a good many electric utilities that energetically pursue area development work that some of their communities put the cart before the horse; they want new industries before they are ready for them. Area development managers seek to impress upon community leaders this thought from the EEI booklet, "The Key to Our Community's Future": "A planning community is fast becoming a must for industries seeking new locations; it is indispensable to balanced development."

ONE of the companies of the Southwest that is making good use of the EEI booklet is Gulf States Utilities Company of Beaumont, Texas. It has supplemented this with a booklet of its own, titled "What Makes a Good Town," which tells "how a betterment program can start in your town." These are the steps suggested: (1) Call a meeting of a few civic leaders; (2) set up a community council; (3) explain purpose of program to a community council; (4) choose an executive committee; (5) choose action committees; (6) use questionnaires to stir thinking among key people about the community; (7) keep on working.

"Our area development department was organized in 1957 with a department supervisor and an area development man in each of our five divisions," says L. N. Brannan, supervisor of area development. "Our first step was to work with the smaller towns and communities in preparing an area development survey of the area. At first the towns were slow to take hold of the program. After we had stayed in close contact with the key people in the communities, the program began to catch the imagination of some of them. We have completed the surveys on twelve towns and have several more almost completed.

"Although the department is young, we feel that we have generated activity in some of our towns. At the present time we are working with a small town on a project that will, if successful, create about 100 new jobs and will eventually increase to 250 new jobs. This is in a rural area where the economy is dependent on farming and timber. The average annual income is low and the increased number of jobs will be a tremendous boost to the economy of the area."

Opportunities in Small Towns

A SERVICE area that embraces many small towns often offers the widest opportunities for success in the field of community development. Such is the case in Mississippi, where the Mississippi Power & Light Company serves more than 400 communities. "We pioneered community development activities several years ago with a program known as 'Helping Build Tomorrow's Community,'" says L. D. Bradshaw, vice president of sales of the Jackson, Mississippi, company. "This program was totally sponsored and supervised by Mississippi Power & Light Company. In 1957 we assisted the Mississippi Economic Council, a state chamber of commerce, in setting up the Mississippi Hometown Development Program, which is still operating. We are a cash sponsor and in addition have furnished a full-time field man. In addition to sponsoring this program, we have promoted a highway beautification project."

In this project the company furnished bumper stickers reading "Keep Mississippi's Highways Clean" and yellow litter bags that can be fastened on car door handles for use as trash receptacles. In advertising this over the air waves, the company stressed these points: "What's the first thing most tourists see when they enter Mississippi? It's the highway they're driving on, of course. And since tourists are guests in our state, we want everything to be clean and neat for them. Here's an easy way to do that very thing. Just keep a litterbag in your car for all the trash and paper that accumulate. Then, at the end of your drive, dispose of the whole thing."

IN newspaper publicity, R. Baxter Wilson, company president, appeared in a photograph with Governor J. P. Coleman and the president of the Garden Clubs of Mississippi, who co-operated in this "Keep Our Highways Clean" propaganda.

ALTHOUGH about forty business concerns and civic organizations contribute financial aid to Mississippi's Hometown Development Program, the Mississippi Power & Light Company, in addition to supplying the only field service, publishes a bimonthly magazine entitled "Helping Build Mississippi" to relate the progress that is being made in many communities. There are annual prizes totaling $7,100, divided into four categories. For towns up to 1,000, there are five prizes totaling $2,000, graded from a $600 first prize to $200 for fifth prize; the same amounts for towns of 1,000 to 2,500 and for those between 2,501 and 10,000. Two prizes, one of $600 and the other $500, are awarded in the group of cities over 10,000.

Projects undertaken must fall into one of the following general categories: agriculture, beautification, business activities, county government, education, family living, health and sanitation, industry, municipal government, population and man power, recreation and culture, spiritual life, tourism, transportation and communication, and youth activities. Each community is limited to five projects, which, however, must include highway beautification and either youth activities or long-range planning.

Accomplishments of Prize Winners

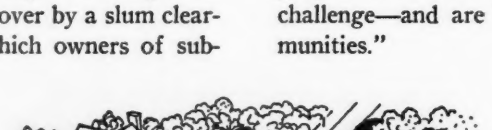
TOO much space would be required to detail projects of all of last year's prize winners, but a summary of the things accomplished by the winners of first prizes will be suggestive of the scope of the undertakings: Ackerman, which won first place in towns of 2,500 and under, installed street markers, tore down old fences and buildings, developed long-range plan for community recreation center, bulldozed an unsightly five-acre plot for Boy Scout huts, conducted a sewage system survey, had a clean-up campaign, painted ten business houses, installed new street lights, purchased 20-acre industrial park, and brought in a new manufacturing plant employing 220 women.

IN the 2,501-10,000 population category, Cleveland, the first prize winner, built a $12,000 airport administration building, planted a three-block-long hedgerow of Chinese holly to screen downtown

area from railroad, improved three city blocks along a bayou, conducted a city-wide clean-up campaign, bought new street sweeper and garbage truck, gave 150 prizes and certificates for lawn and home beautification, approved long-range city plan, improved library facilities, improved traffic and parking control, and brought in two new industries.

NATCHEZ won first place among cities of 10,000 and over by a slum clearance approach in which owners of substandard buildings were urged to raze them, beautified approaches to city, resurfaced major streets, installed modern street lighting throughout commercial areas and on approaches to city, purchased a 315-acre tract for river port and industrial sites, and worked for new hospital and youth center.

Scores of municipalities in Mississippi, says the Mississippi Power & Light Company, have "come awake—risen to the challenge—and are building better communities."



Other "Best Community" Programs

ANNUAL contests for prizes for the best community development projects have also greatly stimulated interest in the service areas of the Union Electric Company of St. Louis and its two independently operated subsidiaries, the Missouri Power & Light Company and the Missouri Edison Company. These are called Planned Progress programs. Their slogan is "Teamwork can build brighter futures." These programs, the company says, are "based on the belief that people living in a community have a better appreciation of their problems and their needs than an outside agency and that interested citizens working together for the common good can and will build a better America."

Planned Progress is divided into two parts—a youth program and an adult program. Both have a common goal—better community life. The high school Planned Progress Program is essentially one of planning. It gives young people an oppor-

tunity to study their home towns at first-hand and see how they operate, what they need, what they can afford, and then provides a means whereby young people can present their ideas to the adults.

ACTION is the keynote of the Planned Progress Program in adult groups. Planned Progress councils are composed of representatives from all organized groups within the community and individuals interested in seeing their own towns grow and prosper. The adult councils function in several ways. They serve as a clearinghouse for ideas, man power, and resources, and they also serve as a coordinator for the various activities which are going on in the community at one and the same time.

Union Electric started these programs in its own service area in 1952-53, when some 30 schools and 36 communities took part. The program has gradually expanded into the service areas of the other two companies until more than 100 schools and 200 communities entered the program last year. More than 2,000 projects were described in reports by participating communities. Judging of entries was done by the rural sociology department of the University of Missouri. Towns and cities were grouped according to population.

Some Notable Case Histories

LET us take a look at what happened in Desloge, which won a $1,000 first prize for towns of over 1,000 in Union Electric's service area. Desloge was seriously damaged by a tornado in late 1957, which spurred the citizens to a major renovation job. Twenty organizations were represented in their Planned Progress Council. They completed a total of 40 civic improvement projects, including replacing of trees in the city park, providing white-way lights for the business district, promotion of a school bond issue, and working to obtain city mail delivery.

In Horine, a town of only 130 persons, the adult council reported on 22 development projects, among them work on a civic building, establishment of a well-baby clinic, house numbering, street signs, publication of a monthly newsletter, and road improvements. In some of the other prize-winning towns there was such a variety of projects as a short-wave radio system for better law enforcement, sponsorship of baseball leagues, fire department improvements, a blood donation program, and erection of community buildings.

"Our assistance in any community," says Ralph E. Dawson, Jr., "is largely limited to organizational work and supplying ideas and sources of information when requested. We do not, under any circumstances, ever actively carry out a project for a community. The essence of the program is helping communities to help themselves. We issue a number of publications in support of this work, such as monthly newsletters, a book of plans and ideas, and a manual for Planned Progress officers, which is kept up to date and supplied to all participating towns."

In the 1959 program, Union Electric and its two subsidiaries have recently held a series of workshop conferences, in which 724 community leaders from 153 towns took part.

Up in Wisconsin

THE Wisconsin Power & Light Company has assisted in organizing more

than 100 local development corporations in the 15,000 square miles of territory it serves in southern and central Wisconsin. Community development and industrial development go hand in hand. "Our activity is in the form of helping the communities to help themselves," says J. R. Frederick, director of the company's development department. "Our efforts usually start with a meeting attended by members of a civic club or business organization that is interested in finding how they can best increase the business and economy of their community. We stress the development of the community along lines of schools, parks and recreation areas, street improvements, business section improvements, utilities, water, sewer, fire and police protection, etc. We state that these are elements which make for a good 'business climate' and that some good planning must be done to accomplish an improvement in business climate in their communities.

"This is usually followed by further meetings between those vitally interested and the formation of a community development or industrial development corporation. These corporations raise money for various and sundry community improvement purposes in addition to supplying funds to help industry get established in their towns. Funds have been raised for libraries, parks and recreation areas, parking lots, street widening, etc. The most funds have been raised to help industry to locate in the community by building buildings for lease or purchase by the industry."

WISCONSIN POWER & LIGHT has prepared a guidebook, entitled "Organizational Guide for Community's Industry Development Corporation," and another titled "Planning for Our Community." This latter booklet, Mr. Frederick says, has received widespread recognition, having been requested by nearly all public libraries in its territory and by university libraries throughout the country. The company also uses two General Electric publications, called "Business Climate, What It Is, How to Improve It" and "Guide to Making a Business Climate Appraisal."

IN its booklet, "Planning for Our Community," Wisconsin Power & Light makes this point:

> We hear a lot of talk about industrial promotion. How can we logically promote industrial development until we have planned a place for it and the resultant growth? Too, how can we intelligently promote our community if we don't have the facts and figures available that come from good planning?

For those communities in its area that are organized and working along sound lines for civic betterment, the power com-

pany prepares data sheets for submission to industrial prospects. Or rather, the community itself prepares the data. "We produce these sheets," says Mr. Frederick, "only for communities that are organized and are able to collect the data for themselves."

Up to a recent date the company had produced 19 of these sheets and before the program is completed will have at least 60. These, as completed, are sent to some 400 out-of-state industries and about 100 in the state. "We feel," says Mr. Frederick, "that these one-page data sheets are valuable to the communities and to the company for the following reasons:

First, the preparation helps to get the community to inventory itself so it knows what it has and has not.

Second, the plan provides a one-page thumbnail sketch of the community, which is a time saver for both the industry and the community, because in a few minutes an industry can determine if the community has what it is looking for.

Third, the one-page sheet is most usually read, while a large multipage brochure might be discarded.

Fourth, these sheets provide a valuable inventory of communities that can be used with prospects interested in a state location.

Fifth, the community business leaders can insert these sheets in envelopes containing checks paying for goods or services.

Sixth, use of these data sheets by a community makes the community want the company as a member of its community, thereby helping the company's relations with community leaders.

Thus the Wisconsin Power & Light Company dovetails community development and industrial development work for the towns and cities it serves and at the same time does a good public relations job.

"WHEN everybody has to pay more for whatever they themselves consume, it's only natural for them to make up the difference when they can by charging more for what they sell or do. In the end, after circling around, even the professional economists must come back to the starting point: the increased costs of production of goods.

"One of the biggest reasons production of goods is so high is that government spends so much of the taxpayers' money for so many things. For example, the federal civilian payroll for the fiscal year that ended June 30th for the first time in history reached $12 billion a year. This money, taken from the taxpayers and used to pay people, many of whose sole duties are spending more of the taxpayers' funds, is also spent for available goods and services.

"Thus it goes, and there is little likelihood that haircuts and home repairs will stop going higher so long as the government insists on spending so much of its citizens' money in competition with its own citizens."

—EDITORIAL STATEMENT,
The Wall Street Journal.

The Outlook for Bonneville Power Legislation

By EDWARD R. LUCAS*

In the September 24th issue of this magazine, there was an analytical article portraying the steady progress of federal public ownership in the electric power industry in the United States. The proposed Bonneville Power Corporation Bill (still pending) was used as an illustration of the latest and most far-reaching to date of such proposals, and a possible pattern for future legislation elsewhere. The question now arises: What are the chances that this so-called "Neuberger Bill" will be passed, or its principles applied to other areas? This article seeks the answer to such a question on the basis of local reaction in the Bonneville area.

"THE wrong bill at the wrong time in the wrong place." Such is the description by a man intimately acquainted with both sides of the Pacific Northwest power picture, of S 1927, the measure recently introduced in the United States Senate by Senator Richard Neuberger (Democrat, Oregon).

This bill, commonly known as the Neuberger Bill, would create a Bonneville Power Corporation. In defining the proposed corporation's responsibilities and powers, the measure would alter quite radically the structure of the present Bonneville Power Administration. It would give the new corporation many powers that the BPA lacks.

These new proposed powers have stirred up a storm of opposition among organizations and individuals that approve the present Bonneville Power Administration setup. Some critics assert that the bill seeks to create a Columbia Valley Authority under a new guise. The private utilities see in it a potential threat to their own existence and their future opportunities for expansion.

Others see it as a force which would disrupt the present delicate balance between public and private ownership of power-generating facilities in the Pacific Northwest and the program for orderly expansion of generating facilities which utility groups have developed jointly in recent years.

SUPPORTING the legislation are groups and individuals favoring in principle the public ownership of power generation and distribution. The Washington Public Utility Districts' Association, for example, approves most of the provisions of S 1927.

*Professional writer, resident in Poulsbo, Washington. For additional personal note, see "Pages with the Editors."

This association represents 24 public utility districts in the state of Washington.

As far as the present session of Congress is concerned, further action on the bill is unlikely. The last action taken for 1959 was, presumably, the three days of hearings in a Senate Public Works subcommittee last July. No further hearings were conducted during the balance of the first session of the 86th Congress.

The Importance of the Neuberger Bill

EVEN though there is no immediate likelihood that the measure will be enacted, the issues it raises are important to utility people everywhere. They are issues not just of principle but of practical application in a specific situation.

First, what are the major purposes of this bill as outlined in its 45 printed pages?

Primarily, the bill would replace the present Bonneville Power Administration with a Bonneville Power Corporation. It would give this new corporation authority to finance its own operations without depending on congressional appropriations from one year to the next. Its structure would be similar in many ways to that of a private corporation.

The legislation would further give the corporation authority to finance additional power-generating facilities. For hydroelectric projects, construction and ownership would be assumed by other agencies. For thermal and nuclear facilities, the corporation would be empowered to construct the facilities itself.

The present version of the bill differs substantially in several important respects from the original bill, S 3114, accommodating objections raised at a hearing held in December, 1958. For instance, the new version specifically denies the corporation the power to acquire hydroelectric facilities by condemnation or to construct such facilities itself. Another change requires that the manager for the corporation be appointed by the regionally selected board of directors instead of by the President.

"FROM the point of view of our organization, a principal achievement of this legislation would be to put the Bonneville Power Administration onto a businesslike basis," according to Ken Billington, executive secretary of Washington Public Utility Districts' Association in Seattle.

"As it is now administered, the BPA must pay all its revenue to the federal government every year. It must then go before Congress to get appropriations from the members for its necessary operating expenses. In so doing, it must compete with all the pet projects of the politicians. This, we feel, is an unbusinesslike way to manage such an activity.

"This bill would not set up a Columbia Valley Authority patterned after the TVA. The TVA does many things which this corporation would have no authority to do. This is the latest and, we believe, the best in a series of bills that have been introduced in recent years to put this federal agency's activities on an efficient operating basis."

The organization of the corporation would begin with a board of five directors, each appointed by the President. These men would be residents of the Pacific Northwest and would receive salaries of $20,000 per year. They would appoint the general manager, who would make the

other key appointments with the approval of the board. Salary of the manager would not exceed $20,000 a year.

Self-financing Aspects

THE self-financing ability of the corporation would be provided through its operating fund. The corporation would pay its operation and maintenance costs out of this account.

In addition, the corporation would be permitted to issue to the United States Treasury, interest-bearing bonds secured by a pledge of its revenues. The Treasury would then sell the bonds in the money markets. Money from these issues would go into the operating fund, where it would be used according to the intent of the act, primarily for investment in new generating equipment. The ceiling of long-term obligations of this sort would be $1.1 billion.

This financing arrangement would be reviewed at the end of eight years. Then, the corporation would submit to the President and Congress its recommendations as to a permanent method of financing. The expedient of selling bonds to the Treasury, proponents explain, is necessary to build up a borrowing experience for the corporation. After eight years, it would be able to bypass the Treasury and sell bonds on its own in the securities market, as the TVA is now able to do.

PROVISIONS of the act specifically deny the corporation the right to build its own hydroelectric generating facilities. For new federal projects of this sort, it must lend the money for such construction to other agencies, such as the Bureau of Reclamation or Army Corps of Engineers. However, it can construct thermal or nuclear generating facilities.

What of opponents' contention that this is just a new version of the attempt to set up a Columbia Valley Authority?

If a proposed CVA were to be set up along TVA lines, it is clear that this is not the sort of organization that is proposed here. Powers of the corporation are more limited and it does not assume such a wide area of social responsibility.

It is just as clear that the powers proposed for the corporation are considerably wider than anything that would be needed just to set it up on a "businesslike basis."

BY REMOVING a number of controls, especially congressional ones, the corporation would be given much greater freedom of action to pursue its ends in a more aggressive manner. It would become the dominant force in the Pacific Northwest utility picture. It would be the one single agency in the entire Northwest with the resources sufficient to enable it to make long-term plans for construction of big generating projects. As such, it might very possibly muscle out of the way such organizations as the Puget Sound Utilities Council, an association of publicly and privately owned utilities.

Proposed Power of the Bonneville Corporation

ALTHOUGH the sponsors have accepted some limitations, the Bonneville Power Corporation would have authority to own generating facilities which the present Bonneville Power Administration lacks. The BPA exists today solely as a marketing agent, selling power generated at federal dams to the distributing com-

panies, municipalities, the public utility districts, and the large industries. Bonneville dam, for instance, is operated by the Army Corps of Engineers and Grand Coulee by the Bureau of Reclamation.

Under bill S 1927, the corporation would be denied the opportunity to build new hydroelectric projects of its own, or to acquire existing ones *by condemnation*. Even here, the door is left part-way open for the corporation to acquire hydroelectric facilities under certain circumstances.

This could be done, opponents point out, by condemnation of certain transmission lines, which the corporation could acquire that way under terms of the bill. If the transmission line of a utility from a certain project were acquired by condemnation, that utility would have no way to sell the power from the plant. It could conceivably be compelled by this device to sell its generating facilities to the corporation as well.

The bill does not forbid the corporation to acquire hydroelectric facilities *by negotiation*.

THE bill notably does not prevent the corporation from building its own steam-generating plants or nuclear power-generating facilities. By the time the big dam projects now under construction have been completed, there will be few dam sites capable of generating cheap electric power available for development. Assuming progress in nuclear power plant design within the next decade or two, nuclear power plants will soon be more economical to install than remaining available hydro projects. Good hydro sites *not* available include several where dam construction would conflict with fisheries, towns, railroads, and other uses.

The Bonneville Power Corporation, with a billion dollars or so to invest in new installations, would unquestionably become the dominant producer as well as wholesaler of power in the Pacific Northwest. This is a development which the privately owned utilities have good reason to fear.

The Short-range Difficulties

THIS is a long-term fear, however. A short-term apprehension by critics of the proposal is that a corporation set up along these lines would disturb the very effective working arrangements which both publicly and privately owned utilities have made for developing the power resources of the area. One of the purposes of the bill, they point out, is to set up an agency which can undertake overall planning of future power developments. This, they point out, is absolutely unnecessary since the job is already well in hand.

"Even if we had another critical water year like that of 1952, the utilities would have no difficulty whatever in meeting the power load," says Jack D. Stevens, consulting engineer of Seattle, Washington. Mr. Stevens serves as consultant to privately, publicly, and municipally owned utilities and helped organize the Puget Sound Utilities Council several years ago.

"It is somewhat ironic that a measure of this sort should be introduced in the Pacific Northwest, where utilities have taken the lead in constructing co-operatively financed projects such as Rocky Reach, Priest Rapids, and Wanapum on the Columbia river," he believes. "The Rocky Reach dam, a $273 million project, has six owners including the sponsor, Chelan County PUD, four privately

owned utilities, and ALCOA. Priest Rapids and Wanapum, located on nearby sites on the Columbia, are sponsored by the Grant County PUD, and are owned by four privately owned utilities, six municipalities, including Seattle and Tacoma, and three public utility districts, including Grant county. Wanapum is a $195 million installation and Priest Rapids is costing about $161 million.

"ALL three of these dams are now under construction and will supply low-cost electricity to the participating utilities.

"These utilities have demonstrated that they can do something that some people feel can only be properly done by the federal government: finance big projects. The principal justification for the government's going into the Northwest electric-generating business in the first place was the assumption that only government could provide the vast sums of money needed to finance the large multipurpose projects on the Columbia river. The present unique co-operative ventures in dam construction have shown that such projects can be handled without intervention or assistance by the federal government. The utilities are not only showing how it can be done but are proceeding to do it. Because of these and other new developments, the power needs of the Pacific Northwest will be readily met in the future."

IN the view of Mr. Stevens, a newly created Bonneville Corporation would be asked to step in to do a job which already has been satisfactorily done. The result would be confusion and conflict.

He points out further that the climate of opinion in the Pacific Northwest is no longer ardently propublic power. Residents do not care whether a kilowatt has been generated by a publicly or privately owned utility, so long as it is a good kilowatt and available at a reasonable price.

A recent poll, he relates, disclosed that, as a matter of principle, the consumers prefer that the utilities work together in solving regional power problems.

The Power Supply Situation

AT present, the facts appear to support the contention of one utility spokesman that "we have power running out of our ears." From 1950 to 1957, installed capacity in the Pacific Northwest nearly doubled. Generative capacity in the region now exceeds 9 million kilowatts. When combined with projects under construction and those licensed but not yet under construction, this will bring the total capacity to approximately 15 million kilowatts.

Although this is less than half of the region's total estimated potential, no more than about 20 million kilowatts of hydroelectric capacity altogether is economically feasible to develop. This means that all the cheap power will have been developed or that the projects will already be under way, by the time the proposed Bonneville Corporation would come into existence.

THAT a number of the publicly owned utilities of the area no longer feel the power pinch, was demonstrated at the time negotiations took place for financing the Rocky Reach dam. The municipalities of Seattle and Tacoma were invited to participate, being urged to do so to keep cheap power in that area. Despite the fact that the power from the installation will be as cheap as any new developments in the Pacific Northwest, the two cities declined to take part. They presumably have access, for some years to come, to all the low-cost power they will need.

In addition to the power resources already under development in the states of the Pacific Northwest, there are power developments going on north of the international boundary that will bring even more kilowatts into the region. Most recent development is the Peace River project up in Canada that will initially generate more electricity than the Canadians can use.

Also, the Mica Creek storage and power project on the upper Columbia will greatly add to the power supply in British Columbia and the Northwest states.

The Controversial Preference Clause

IN working out the details of his bill, Mr. Neuberger struck one sectional snag in the form of the so-called preference clause. This is the provision in the present Bonneville Project Act that gives publicly owned utilities first call on the low-cost federal power.

THE purpose of this clause has been to provide public utility districts and municipalities with a source of power for distribution systems which they acquired from the privately owned utilities. Without the clause, some utility districts would not have been able to survive. At the same time, this has been a point of contention with privately owned utilities which have not had equal opportunity to buy cheap power from large federal projects.

The snag encountered by Senator Neuberger is the circumstance that the distributors of power in Oregon are almost all privately owned companies. Unless the preference clause were amended, new power projects developed through the Bonneville Power Corporation would send most of their kilowatts to the state of Washington.

Accordingly, at one point the Senator advocated elimination of the preference clause in his new bill. Public power advocates opposed this suggestion vigorously, modifying their support of S 1927. Compromise wording in the measure now states that there shall be no "unreasonable geographic concentration" of power distributed by the corporation. Except for this modification, the preferential clause would presumably be retained.

AMONG opponents of the bill—and they appear to be in a substantial majority—there is no immediate anxiety about its passage.

This stems in part from their belief that the measure stands a very slim chance of passage, even if it gets to the Senate floor.

THERE is visible a certain lack of respect for the measure. This may be due in part to the sponsors' apparent unwillingness to accept at face value the power developments of the last eight years. Those developments, which are there for all to see, undercut many of the arguments in favor of the bill.

Another fact to reckon with is the growing public indifference to the issue of publicly or privately owned power in this area. People just cannot get excited about this issue, as they formerly did.

Ten years ago, the consensus seems to be, the bill might have had a more solid basis for acceptance. Today, the prospects for its passage are decidedly dim.

If the Government Were an Investor

"ONE of our people has figured out that federal, state, and local governments would have to own 80 per cent of our outstanding shares to get as much revenue from us in dividends as they now do in taxes.

"At the same time, the maze of multiple taxes within which business must operate today is so complicated and so far-reaching in its effects that probably only a tax expert can find his way around in it with any degree of certainty.

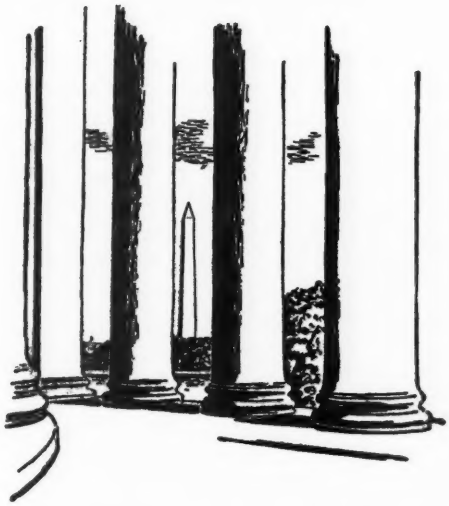
"Yet, we feel that it is important for every one with managerial responsibility to have more than a surface understanding of the tax structure within which he operates—and to remember always that the only real pay-out comes 'after taxes.' Decisions based on what appears to be extremely logical thinking may very well prove to be illogical, and costly, when the net 'after taxes' effect is computed. When several alternate courses of action are being considered, the second or third choice may actually be better for the company than what at first glance seems to be an obvious first choice.

"No manager can make intelligent decisions under these conditions without at least a working knowledge of federal, state, and local income and franchise taxes, real estate and personal property taxes, and other possible tax costs in his area.

"This does not mean that we expect our division and department heads to become tax experts. But we do expect them, in considering any proposed course of action, always to raise—and get an answer to—the question: What does it look like 'after taxes'?"

—W. F. ROCKWELL, JR.,
President, Rockwell Manufacturing Company.

Washington and the Utilities



Doerfer on Regulatory Reform

THE House Subcommittee on Legislative Oversight was not so engrossed with its spectacular investigation of cheating on the TV quizzes that it overlooked the recent gathering of the National Association of Railroad and Utilities Commissioners at its seventy-first annual convention in Philadelphia, October 12th to 15th. After all, the federal and state commissioners are brothers under the regulatory skin. And the NARUC meeting was a natural forum to detect repercussions, if any, from the pounding which the federal commissions have been taking for the last two years from the House investigation group headed by Representative Harris (Democrat, Arkansas).

And it was only natural that the primary action should come from the head of the federal commission which has been hit the longest and the hardest, the Federal Communications Commission. Chairman John C. Doerfer's speech on October 13th at the Philadelphia meeting on "Legislation Affecting the Federal Regulatory Process" could hardly be called defensive. On the contrary, Chairman Doerfer blamed the legislative tendency to stratify commission procedures along the lines of judicial tradition for many of the ills of delays and other shortcomings into which the subcommittee has been delving.

The very nature of the regulatory process, said Chairman Doerfer, makes it impossible for commissioners to look or act like judges, or climb up on an isolated bench into a judicial vacuum, whenever approached by real parties in interest, or their representatives. He did not condone undue influence in any way. But as far as the FCC was concerned, he apparently does not think much of statutory strait jackets which have already been imposed on commission procedures to date; and he saw a great deal to be desired in some of the pending statutory amendments. Doerfer commended the work of the House Legislative Subcommittee as a whole, and the moderate attitude taken by it under the leadership of Representative Harris and the present counsel, Robert Lishman. He felt sure that the group was straining for a reasonable solution to some admittedly difficult problems.

SPEAKING of delays resulting from 1952 amendments to the Communications

Act, Doerfer told his fellow commissioners, both federal and state, in Philadelphia:

> . . . suffice it to say an iron curtain was dropped between the commissioners and some of its [FCC] key personnel. It has become unlawful for the commissioners to consult with the general counsel, chief engineer, chief accountant, and others in their departments whenever an adjudicatory matter has been designated for hearing—albeit, these department heads are not participating directly in the designated hearing matter. Special legal and engineering assistants for each commissioner are not adequate substitutes.

WHAT seemed to irk Chairman Doerfer was the almost indiscriminate extension of rights granted to parties who have no direct interest but who can hamstring and clutter up a proceeding interminably. The FCC chairman wondered how many schools, bridges, roads, etc., could be built if all bidders could demand the lengthy hearings, with all the courtroom trappings, of the federal Procedures Act. Yet in most cases interveners in FCC proceedings obviously have no public interest at heart, even while posing as private attorney generals. They are there to serve their own ends and accordingly take maximum advantage of procedural opportunities. Doerfer concluded:

> What this country needs is a reassessment and rearrangement of its administrative procedural laws, not any further extension of procedural rights to those who should have no right to be in the case in the first place, nor to those who having that right are not, in fact, adversaries over property or vested rights, but merely contestants for a privilege, valuable or not to them, but essentially beneficial to the public.

FROM his home in Woodbury, Georgia, a member of the Harris subcommittee stated his view on October 14th that the regulatory commissioners should be tied closer to the legislative branch. He thought this might be done by changing the appointive power in some way.

This was Representative John Flynt (Democrat, Georgia), who said that he had started preparation of legislation that would change the method of selecting members of federal regulatory agencies. Flynt charged that the "indifference of the agencies" was the "most tragic phase of the hearings which we have just concluded." The Georgia Congressman said legislation was being drafted "which would change the method of appointment of board members and commission members of these agencies." He did not mention any of the agencies by name but the chairman of the Federal Trade Commission and the Federal Communications Commission recently appeared before the subcommittee.

Flynt pointed out that the agencies were created as an arm of Congress, but he said that "over a long period of years many of these agencies and the men who serve on them have begun to consider themselves a part of the executive branch, which they are not." Flynt added that if commission members "are so indifferent and blind that they will not see the harmful effects of fraudulent and deceptive practices such as have been exposed, then the Congress may properly consider changing the method of appointment of these agencies."

Seaton on Gas Control

PIPELINE interests and natural gas producers who hoped that Interior Secretary Seaton would sound the call for an administration crusade for another gas bill, at his recent appearance before the

American Gas Association in Chicago, got considerably less than they expected. The Interior Secretary's remarks on the subject of amending the Natural Gas Act, so as to relieve producers from Federal Power Commission control to any great extent, were quite general and hedged about with a formidable *conditio sine qua non,* which amounted to an invitation to a do-it-yourself program for the gas producers.

Seaton loyally followed the overall position of the Eisenhower administration in viewing present difficulties of the FPC in the field of gas regulation as undesirable. But he was quite vague as to whether the remedy will actually be worked out by legislation or regulatory adjustment.

Reading somewhat between the lines, Seaton's comments on the prospects for gas legislation along the lines of the Harris Bill, which the President reluctantly vetoed during the 85th Congress, were anything but hopeful. He said, in effect, that the FPC has a tough row to hoe and that some kind of legislation may eventually be necessary to extricate the FPC from its present jurisdictional difficulties in the gas fields. But he also said that (1) the different segments of the industry would have to agree among themselves, and (2) would have to agree to accept the consumer protection, and then (3) develop support, themselves, for remedial legislation.

IN short, it is apparent that the administration, judging by Seaton's remark, is in no more of a mood to stick its neck out and take the lead on pushing another gas bill than Congress was disposed to do, during its last session. After all, if the entire gas industry *could* get together on a bill that would also protect the consumer's interest to the satisfaction of consumer champions in Congress, it would not need much administration support.

The mere willingness of the President to sign on the dotted line would undoubtedly be sufficient under such ideal circumstances.

So, if the gas men were looking for Secretary Seaton to carry the ball, they were disappointed. It now looks as if the administration expects the gas people to run with it themselves. If they can make satisfactory progress against the political opposition in Congress, fine and dandy. Then, the administration is willing to cooperate. This may be some comfort to the gas producers; but hardly enough to set off bonfires or snake dances in the Panhandle country. By this time, however, a good many of these gas men have become realists enough to start thinking more about how to live within the federal house of regulation, instead of how to escape from it.

Rising U. S. Power Demands

A SENATE-HOUSE economic subcommittee was told on October 13th that the nation's conventional fuel resources should continue to be available in good supply to meet estimated needs through 1975.

Bruce C. Netschert, research official for Resources for the Future, Inc., testified this should mean no appreciably higher "constant-dollar cost" for these fuels in the next sixteen years. Mr. Netschert and Sam H. Schurr, director of energy and mineral resources for Resources for the Future, appeared at the opening of a week of hearings on U. S. energy resources.

Resources for the Future is a nonprofit research corporation set up in 1952 with the aid of the Ford Foundation. Mr.

Netschert told the subcommittee he foresees only a minor rôle for atomic energy as a power source between now and 1975. He also dismissed oil shale and solar energy as insignificant power sources during the period.

Mr. Schurr explained that the subcommittee was being given an advance look at figures from a major research project to be published next year. He estimated that in the two decades from 1955 to 1975 there will be a 120 per cent increase in the use of hydro power, 107 per cent in natural gas, 95 per cent in oil, and 75 per cent in bituminous coal. For anthracite coal, which already has lost most of its market, he predicted a further 30 per cent decline.

MR. SCHURR pointed out this forecast would mean a reversal of the trend for bituminous coal, whose use has been decreasing chiefly because of loss of much of the home heating market and because of dieselization of the railroads. The witness said soft coal already has taken its biggest setback from these factors and heavy use in electric power plants should mean an upturn in coal consumption. He said his organization's study forecasts a 210 per cent increase in consumption of electricity in 1955-75.

The estimates for gas and oil would mean a considerable slowing down in their rate of increase, after their spectacular recent growth. Mr. Netschert, discussing U. S. reserves in major fuels, said oil is the one with the most precarious position, based on current industry figures. He testified the oil reserve estimate is 12.7 times 1958 production. For gas the comparable figure is 22.9, and for coal 2,200.

ANOTHER forecaster of increasing power needs before the Joint Committee was a power company official, Philip Sporn, president of American Electric Power Company, whose prepared testimony was submitted about the same time. Sporn predicted that atomic energy will be the predominant source of electrical energy by the year 2000, but even then it will be filling only 20 per cent of the nation's fuel needs. Sporn said that in 1975 the country's electric requirements will total 2,000 billion kilowatt-hours. This would take the equivalent of 700 million tons of coal to produce, as against 300 million tons in 1957. He said only 7.5 per cent of this will be generated by nuclear power. But by the year 2000, he said, electricity needs will have risen to 6,000 billion kilowatt-hours, or nearly ten times the 1957 figure. Sporn predicted that "nearly 40 per cent of this will still be generated by coal, a small amount by fuel oil and gas, a somewhat larger but still relatively small amount by hydroelectricity."

Coal burned for electric power generation will amount to 600 million tons as against an equivalent of more than 850 million tons for nuclear power, he said. He said there is "grave danger that so great an emphasis will be placed on atomic power development that it will tend to forget the essentiality of fostering the continued development of an adequate supply of coal, oil, and gas."

Francis L. Adams, chief of the bureau of power in the Federal Power Commission, said in a prepared statement that "there is little likelihood Russia will overtake this country in the next twenty years in production of electric power."

Telephone and Telegraph

USITA Annual Meeting

ON October 11th to the 14th the United States Independent Telephone Association held its sixty-second annual meeting at the Conrad Hilton Hotel in Chicago.

Hugh Barnhart of Rochester, Indiana, retiring president of the USITA, announced that after many months of negotiations an agreement had been reached for an annual increase of approximately $12 million in toll compensation for 3,800 independent non-Bell telephone companies which serve over 10 million telephones in the United States and Puerto Rico. This represents an increase over present toll compensation of about 10 per cent.

Mr. Barnhart noted the continued diminution in the number of smaller independent telephone companies under the pressure of technological changes, inflation, financing, etc. He said that this was a healthy and necessary trend under prevailing conditions and urged the smaller companies, which are having difficulties in operating as independents, to secure firmer financial support so as to render better service through consolidation, merger, or sale. Mr. Barnhart did not exclude the alternative of new sources of financing such as the REA.

REA Administrator David A. Hamil reviewed the progress which has been made by companies in rural areas in cooperation with the REA in eliminating outmoded hand-cranked telephones and bringing modern telephone service to the farmer.

He noted that farmers now expect modern dial equipment and that they are no longer content to wait their turn to talk to their neighbor down the road. Mr. Hamil said that the farmer is also willing to pay adequate rates for this improved service.

DIRECT distance dialing was the subject of an address delivered by Richard A. Mathews of the American Telephone and Telegraph Company. He said that by the end of this year 15.8 million telephones in the United States and Canada will have direct distance dialing service and 23.5 million will have the service by 1960. Mr. Mathews obseved that direct distance dialing may even be put on a world-wide distance dialing basis.

The telephone industry will again suggest to its subscribers that they renew their efforts to have Congress eliminate the 10 per cent excise tax on communications. R. A. Lumpkin, of Mattoon, Illinois, and chairman of the USITA Tax Committee,

noted that Congress had yielded to pressure when it approved June 30, 1960, as the termination date for the tax on local service. He warned, however, that the industry must intensify its efforts to have this burdensome wartime emergency tax removed. Mr. Lumpkin observed that the excise tax on communications is but one of the many levies about which the USITA is concerned. He said, "From a nominal one per cent levied for the year 1913, corporation income taxes have reached the current level of 52 per cent, casting doubt on the old adage 'no tree ever grows to the sky.'"

The importance of sales and services was noted by the president of *Parade* magazine, Arthur H. "Red" Motley. He said:

> It is encouraging to the entire business community to know that the independent telephone companies are courageously carrying on the ideals of competition even though as public utilities they are, in given areas, regulated monopolies.

Soviet TV Cable Link

THE Russian Ministry of Communications has announced that the Soviet Union and the East European countries of Poland, Czechoslovakia, Bulgaria, Rumania, Hungary, and East Germany will be linked by a TV cable and relay system.

The unprecedented international TV link may eventually be joined to the continental European television link up, resulting in a network of TV cables that would bind together the greater part of the continent of Europe. Many observers feel that this announcement is another indication that the USSR is now turning toward the production of consumer goods and a policy of peaceful economic coexistence and growth.

Silent Telephone Meter Reading

THE Northern Illinois Gas Company and the Illinois Bell Telephone Company are co-operating on the development of a substantially automatically controlled telephone gas meter reading plan. The new system permits a gas or electric company employee to dial a customer's meter number on a telephone which registers the meter reading without the customer being aware that the check is taking place. This, of course, would replace the physical inspection of gas and electric meters on the customers' premises.

The program has been in the planning stage for some time and similar schemes have been discussed in the FORTNIGHTLY (Volume 63, No. 13, June 18, 1959, page 938) and other trade journals.

Earl Tornquist, research engineer for Northern Illinois Gas Company, made known the telemetering plan at the Chicago meeting of the United States Independent Telephone Association. The company hopes to install the first of a series of meter checks via telephone early next year.

The initial installation will be in industrial plants. If this proves practical, as well as economical, further adoption of the system for residential metering will be made.

TELEPHONE companies stand to gain new revenue and gas and electric companies would cut expenses through more efficient use of man power if the new plan proves successful. At the present time there are 50 to 60 industrial meters in the Northern Illinois service area which have to be read every day at the same time.

With the new system this operation could be handled from the company's central headquarters without the time-consuming physical inspection that must now be done.

Ocean TV Survey

THE Navy has announced the operational use of underwater television equipment in deep water surveys. The system, built for the Bureau of Ships, has been successfully employed in a survey of the ocean bottom at depths of more than 600 feet.

This is the first time that a continuous, remotely controlled visual survey has been possible at such depths.

The primary purpose of the equipment is for salvage and search operations. A movable camera, capable of turning 70 degrees in any direction, and self-contained lights are housed in a remotely controlled vehicle attached to a control vessel by a multiconductor cable. The propulsion system enables the vehicle to hover at any desired depth even in a running current or tide.

The Navy announcement also stated that if fitted with suitable appendages the vehicle could collect samples from the ocean floor and retrieve sunken objects. The unit was produced by Vare Industries of Roselle, New Jersey, and it is expected that similar units will be used for commercial salvage work or advance surveys of transoceanic cable routes.

High-powered Space Radio Forecast

SCIENTISTS at the Langley Research Center in Virginia have discussed the possibility of duplicating a celestial process to produce a new type of radio communication system. Scientists have known for some time that stars produce radio "noise."

It is now believed that it may be possible to duplicate, in a controlled fashion, this "noise" phenomenon and produce extremely high-powered radio waves which might be of use in long-range communications between space vehicles and earth stations.

The development of the radio telescope has produced much information about the universe and a good portion of this knowledge has been gleaned from the "noises" produced by the interaction between charged particles and magnetic fields. The study of this phenomenon is called variously magneto-plasma dynamics, magneto-hydro-dynamics, and sometimes magneto-gas-dynamics.

The Langley Research Center is a unit of the National Aeronautics and Space Administration and scientists there admit that it is still too early to assess the potentialities of this interaction between charged particles and magnetic fields.

Radar for Passenger-Freight Planes

THE Federal Aviation Agency has been asked by the Air Line Pilots Association to require all scheduled air-line passenger and cargo planes to carry radar equipment in order to avoid bad weather. Spokesmen for the pilots asserted that the recommendations were based on safety and economic benefits.

The Federal Aviation Agency has proposed that air-borne radar be installed on large, four-engine, passenger-carrying aircraft. However, if the Air Line Pilots Association recommendation is heeded, even small, two-engine planes would be required to carry such electronic devices.

Financial News and Comment

By OWEN ELY

Higher U. S. Fuel Costs Offset by Efficiency

ACCORDING to a bulletin recently released by the statistical department of the Edison Electric Institute, the average fuel cost of generating one kilowatt-hour was the same in 1958 (three mills) as in 1954. During this period the U. S. averages were as follows:

Year	*Average Btu Per Net Kwh.*	*Average Cost Per Million Btu*	*Average Cost of Fuel Per Net Kwh.*
1958	11,090	26.8¢	3.0 Mills
1957	11,365	27.1	3.1
1956	11,456	25.4	2.9
1955	11,699	24.3	2.8
1954	12,180	24.4	3.0

Thus, while the average cost of fuel increased 10 per cent, generating efficiency also increased 10 per cent, providing an offset. Of course this was not the case in some individual states. Thus in New Hampshire fuel costs increased 15 per cent and efficiency only 5 per cent, so that net fuel cost was up 10 per cent. (The state has substantial hydro power.) Maine, on the other hand, increased efficiency 17 per cent, more than enough to offset the 15 per cent in fuel costs. For New England as a whole there was a gain of about 4 per cent in net fuel cost. The same was true for the Middle Atlantic states. Strangely, New York showed a gain in efficiency of only 3 per cent, and the price of fuel increased 12 per cent, while in New Jersey efficiency increased 10 per cent, enough to take care of rising fuel prices. Pennsylvania did not do quite so well—efficiency gained 6 per cent and fuel costs increased 10 per cent.

THE East North Central states—Ohio, Indiana, Illinois, Michigan, and Wisconsin—made an excellent average showing, efficiency gaining 13 per cent while the price of coal was up only 4 per cent (possibly due to low freight charges) so that it cost 10 per cent less to generate power last year than in 1954. Indiana made the best showing with a net saving of 12 per cent.

In the West North Central region

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(Minnesota, Iowa, Missouri, Nebraska, Kansas, and the Dakotas) there was also a good gain—average efficiency increased 9 per cent and there was only a slight increase in the price of fuel, resulting in a net saving of 9 per cent; Minnesota, South Dakota, and Kansas made the best showing.

In the South Atlantic area—the states facing the Atlantic ocean from Delaware to Florida—efficiency increased 8 per cent, but the price of fuel gained 11 per cent, so there was a net increase in cost of 3 per cent. (In Florida it amounted to 13 per cent.) In East South Central territory —Alabama, Mississippi, Tennessee, and Kentucky—efficiency offset the moderate increase in the price of fuel, on the average; but Mississippi made a very poor showing with a 49 per cent increase in cost of fuel (mostly gas) offset only slightly by greater efficiency.

THE West South Central states were also affected by rising costs of gas and oil, particularly Arkansas which showed no gain in efficiency and paid 50 per cent more to generate one kilowatt-hour. Louisiana also made a poor showing but Oklahoma, with a notable gain in efficiency, held even. Texas reported a 12 per cent gain in efficiency but net cost of fuel increased 25 per cent, from 1.2 mills to 1.5. However, the latter cost was less than one-quarter as much as in Vermont.

In the Mountain area it is hard to appraise results because of the large amount of hydro power and erratic fuel prices; however, on the average efficiency gained 11 per cent, enough to offset higher prices.

In California the sharp increases in cost of oil and gas (41 per cent and 31 per cent, respectively) penalized earnings sharply, necessitating substantial rate increases. Efficiency gained 11 per cent, holding the net increase in kilowatt-hour cost to 26 per cent. The California figures emphasize the importance of securing rate adjustment clauses to take care of changes in fuel cost automatically, after allowance for efficiency. (The adjustment could be based on average cost of fuel per kilowatt-hour, not on the price of fuel.) This would help stabilize utility earnings and help eliminate investors' fears that regulation would not provide prompt and effective relief against higher fuel costs.

More about the New Fuel Cells

AN interesting article on the fuel cell, the device that converts chemical energy directly into electricity, appeared in the *Scientific American* for October, written by Leonard G. Austin of the University of Pennsylvania. The *potential* efficiency of the cell is estimated at 45-75 per cent, while the steam generator and gas turbine are said to be reaching a limit around 40 per cent, and internal combustion engines at 30 per cent. These ceilings on efficiency are largely imposed by the second law of thermodynamics which decrees that more than half of the original energy must be lost in wasted heat—plus further losses due to friction, etc.

The author describes the new "hot" cell developed by Francis T. Bacon of the University of Cambridge. It operates at temperatures up to 250 degrees centigrade, with gas pressures up to 800 pounds per square inch, which speed up the reactions and permit the cell to produce some six times as much power as the low-temperature cell. It can deliver as much as 150 watts per pound of weight as against 10 watts from ordinary storage batteries now in use, and thus should be valuable for use in airplanes, locomotives, submarines, etc., where size and weight are at a premium.

THIS type of cell could also be used to aid in developing solar power: Mr. Austin thinks that a 100,000-kilowatt station could be built in the desert which would have an overall efficiency of 25 per cent compared with only 10 per cent for present solar batteries or solar boilers. He also believes that it could be used to reduce the cost of nuclear power. Atomic power plants have to be operated continuously at near-peak capacity in order to yield cheap electricity, because of their high capital costs. If supplemented by batteries of hydrogen-oxygen cells the power generated during periods of low demand could be used to separate water into hydrogen and oxygen, which (after temporary storage underground) could produce electricity through fuel cells during periods of peak demand.

However, to generate economical power on a large scale the fuel cells must "burn" cheap fuels such as coal, natural gas, vaporized gasoline, etc., and this would require operating temperatures above 500 degrees centigrade. Attempts thus far to construct cells operating directly on coal or coke have been disappointing; a mixture of hydrogen, carbon monoxide, and hydrocarbons made from coal seem more promising, since the mixture could be piped directly from the gasification plant and used hot.

HOWEVER, running the cells at ultrahigh temperatures raises new problems. A special electrolyte is required and new techniques must be developed. Moreover, fuel cells cannot produce high voltages and the power is direct rather than alternating current. At present, therefore, the ultrahigh temperature fuel cell is inefficient and further research is needed to bring its performance up to that of the Bacon cell. Engineers are working on the "redox" cell (named for reduction and oxidation) and a number of other reaction cycles. The future development of the ultrahigh temperature fuel cell is a question of applied, rather than basic, research and should fit well into university budgets since no expensive apparatus is required.

If the ultrahigh temperature fuel cells can be substantially improved, Professor Austin thinks large-scale electric power might be generated near sources of cheap

SEPTEMBER UTILITY FINANCING

PUBLIC OFFERINGS OF ELECTRIC AND GAS UTILITY SECURITIES

Date	*Amount (Mill.)*	*Description*	*Price To Public*	*Underwriting Spread*	*Offering Yield*	*Aver. Yield For Securities Of Similar Quality*	*Moody Rating*	*Success Of Offering*
		Bonds						
9/18	$18	Georgia Power 1st 5¾s 1989	101.44	1.72C	5.65%	5.05%	A	a
9/30	30	So. Cal. Gas 1st (s.f.) 5⅛s 1984	101.73	.69C	5.25	4.84	Aa	a
10/1	15	Boston Edison 1st 5¼s 1989	101.21	.89C	5.17	4.74	Aaa	a
		Preferred Stocks						
9/10	3	Community Pub. Ser. 5.72%	102.14	1.92C	5.60		—	d
		Common Stocks—Offered to Stockholders					*Earns.-Price Ratio*	
9/11	31	Union Electric	30.00	.25C	5.47		5.7%	e
9/26	15	Boston Edison	56.75	.45N	5.29		6.4	e

C—Competitive. N—Negotiated. a—The issue was reported well received. d—The issue sold slowly, it was reported. e—Offered to common stockholders on a 1-for-10 basis.
Source, Irving Trust Company

natural gas. He conjectures that large-scale power from such a source might best be used in connection with electrochemical processes, such as the production of aluminum, or in chemical industries.

AMONG the American companies interested in developing the British fuel cells are General Electric, Lockheed Aircraft, and Universal Winding. But since the reports of British progress, a more tangible development has occurred on this side of the water—Allis-Chalmers has demonstrated a full-sized 20-horsepower tractor powered by 1,008 fuel cells. The individual cells are harnessed together in 112 units of nine cells each, according to *Business Week* (October 17th); they are arranged in four banks and electricity can be drawn from any combination of banks. Propane, fed into the cells by a system of tubes, reacts with the electrolyte in the cell (the reaction being aided by a secret catalyst) causing an electrochemical reaction which feeds direct current into a standard controller through bus bars. The controller allows the driver to regulate speed and direction; he can reverse by merely changing the polarity of the flow of current. Allis-Chalmers has not announced any production plans as yet, but its practical demonstration should attract wide attention.

Warrants Again in Fashion

DURING the period of holding company promotion in the 1920's, the use of warrants and other special types of junior securities had quite a vogue in utility finance, but in later years their issuance went out of fashion. However, in recent years warrants have again made an appearance as an adjunct of utility financing, and Moody's Manual lists 17 issues outstanding, mostly of small companies.

Public Service of New Mexico has twice offered preferred stock with warrants—in March, 1953, and in April, 1959. The earlier issue was a 5 per cent pre-

CALENDAR OF PROPOSED UTILITY OFFERINGS
November 1 to December 31, 1959

Date of Bidding Or Sale	*Approx. Amount (Millions)*		*Method Of Offering*	*Moody Rating**
		Bonds and Debentures		
11/17	$250	American Tel. & Tel.	C	Aa
11/24	16	Gulf States Utilities	C	Aa
12/	20	Northern Natural Gas	—	—
12/1	75	Consolidated Edison	C	Aa
12/7	8	Worcester County Electric	C	—
12/9	15	Arkansas P. & L.	C	A
12/15	30	Bell Tel. of Pennsylvania	C	Aaa
		Preferred Stocks		
12/8	3	Fall River Electric Light	C	—
12/9	10	New England Power	C	—
	4	Piedmont Natural Gas Conv.	—	—
		Common Stocks—Subscription Offerings		
11/4	13	San Diego G. & E.	N	—
11/20	12	New York State E. & G.	—	—
		Common Stocks—To Be Offered to Public		
11/18	6	Atlantic City Electric	—	—
11/2	2**	American & Foreign Power	N	—
12/1	—	Public Service Electric & Gas	—	—

C—Competitive. N—Negotiated. *Preliminary rating, or a rating for similar issue of same company. **Does not represent company financing.

OFFERING OF SECURITIES BY PUBLIC UTILITY COMPANIES
(000 omitted)

	January 1 to September 30, 1959					January 1 to September 30, 1958				
	Total	Electric Companies	Gas Companies	Telephone Companies	Other Companies	Total	Electric Companies	Gas Companies	Telephone Companies	Other Companies
Long-Term Debt										
Offered Publicly	$1,265,080	$ 819,600	$315,480	$130,000	-	$2,237,006	$1,463,000	$ 528,758	$ 240,000	$ 5,248
Offered through Subscription	108,571	100,571	-	-	$ 8,000	738,013	19,700	-	718,313	-
Offered Privately	238,435	93,150	97,450	23,650	24,185	409,993	91,043	268,700	42,850	7,400
Total	$1,612,086	$1,013,321	$412,930	$153,650	$32,185	$3,385,012	$1,573,743	$ 797,458	$1,001,163	$12,648
Preferred Stock										
Offered Publicly	$ 190,792	$ 68,142	$ 92,650	$ 30,000	-	$ 310,298	$ 192,500	$ 107,298	$ 10,500	-
Offered through Subscription	27,191	-	24,191	3,000	-	27,283	27,283	-	-	-
Offered Privately	23,300	12,300	3,500	1,000	$ 6,500	33,725	12,100	18,900	2,725	-
Total	$ 241,283	$ 80,442	$120,341	$ 34,000	$ 6,500	$ 371,306	$ 231,883	$ 126,198	$ 13,225	-
Common Stock										
Offered Publicly	$ 200,230	$ 130,535	$ 1,636	$ 66,018	$ 2,041	$ 163,494*	$ 61,125*	$ 79,776	$ 22,593	-
Offered through Subscription	368,927	243,946	109,175	15,182	624	210,110	133,886	31,813	44,411	-
Total	$ 569,157	$ 374,481	$110,811	$ 81,200	$ 2,665	$ 373,604	$ 195,001	$ 111,589	$ 67,004	-
Total Financing	$2,422,526	$1,468,244	$644,082	$268,850	$41,350	$4,129,922	$2,000,637	$1,035,245	$1,081,392	$12,648
SEGREGATION OF FINANCING - BY PURPOSE										
Total Refunding	$ 32,172	$ 7,172	$ 25,000	-	-	$ 231,289	$ 101,900	$ 14,389	$ 115,000	-
Total Divestments	$ 1,490	-	$ 148	-	$ 1,342	$ 153	-	$ 153	-	-
New Money										
Long-Term Debt	$1,579,914	$1,006,149	$387,930	$153,650	$32,185	$3,153,723	$1,471,843	$ 783,069	$ 886,163	$12,648
Preferred Stock	241,283	80,442	120,341	34,000	6,500	371,306	231,883	126,198	13,225	-
Common Stock	567,667	374,481	110,663	81,200	1,323	373,451	195,011	111,436	67,004	-
Total New Money	$2,388,864	$1,461,072	$618,934	$268,850	$40,008	$3,898,480	$1,898,737	$1,020,703	$ 966,392	$12,648
Total Financing	$2,422,526	$1,468,244	$644,082	$268,850	$41,350	$4,129,922	$2,000,637	$1,035,245	$1,081,392	$12,648
SEGREGATION OF FINANCING - BY TYPE										
Competitive Bidding	$1,154,180	$ 920,180	$104,000	$130,000	-	$1,908,468	$1,441,468	$ 227,000	$ 240,000	-
Negotiated Sales	$ 501,922	$ 98,097	$305,766	$ 96,018	$ 2,041	$ 801,708	$ 274,535	$ 488,832	$ 33,093	$ 5,248
Subscription										
Competitive Bidding	$ 165,057	$ 97,964	$ 67,093	-	-	$ 14,528	$ 14,528	-	-	-
Negotiated Sales	288,823	237,039	27,092	$ 16,068	$ 8,624	182,779	150,217	$ 30,976	$ 1,586	-
No Underwriting	50,809	9,514	39,181	2,114	-	778,099	16,124	837	761,138	-
Total Subscription	$ 504,689	$ 344,517	$133,366	$ 18,182	$ 8,624	$ 975,406	$ 180,869	$ 31,813	$ 762,724	-
Private Sales	$ 261,735	$ 105,450	$100,950	$ 24,650	$30,685	$ 444,340	$ 103,765	$ 287,600	$ 45,575	$ 7,400
Total Financing	$2,422,526	$1,468,244	$644,082	$268,850	$41,350	$4,129,922	$2,000,637	$1,035,245	$1,081,392	$12,648

* Includes $622,000 of Common Stock sold Privately.

Ebasco Services Incorporated, Business Management and Financial Department, October 7, 1959 - AVR

ferred offered at par, each share carrying a nondetachable warrant entitling the holder to buy five common shares at prices ranging from $11.375 to $12.375 over a four-year period. Each share of the 5.25 per cent preferred stock issued this year carried a *detachable* warrant entitling the holder to purchase three common shares at prices of $31.25-$33.75 over a period of a little over four years, with antidilution provisions. The warrants became detachable October 1st, and with the common stock selling around 30½ the warrants are quoted at about 6¾. Without the warrants, the preferred stock would have had to carry a higher dividend rate, or a sinking fund. The warrants will automatically provide moderate equity financing at the time of their expiration.

ALABAMA GAS CORPORATION recently sold $5.50 preferred stock (on an underwritten subscription basis), each share carrying a warrant to buy three common shares at prices ranging from $32.50 to $35 through December 31, 1964. The new warrants are nondetachable until January 19, 1960. The common stock has been selling recently on the New York Stock Exchange around 32 and the warrants have been quoted "when issued" around 5¾. Thus while the preferred stock was offered to common stockholders on a rights basis at $100.50 a share, it has been selling recently with the warrants at about 108, and ex warrants (when issued) around 92. Without the warrants the preferred stock would probably have had to pay a 6 per cent dividend. Washington Natural Gas is currently selling to institutions $3.5 million debentures bearing stock warrants, but details are not available.

WHILE nondetachable warrants may seem to present a problem to the investor who wants to "cash in" immediately on the speculative portion of his investment, Wall Street has provided a mechanism to take care of this, by exchanging due bills for the future warrants. This procedure is called "stripping" the bonds or preferred stock of their warrants, as described in *The New York Times* financial section of October 18th.

Warrants are an attractive alternative to making an issue of debentures or preferred stock convertible. Since they provide a cheap "option" method of buying stock—in effect a long call—they are popular with speculators who are doubtless attracted by reports of the tremendous profits which have been made in warrants for some industrial stocks. Because of this popularity they may provide the issuing company with better market value than the alternative use of a conversion feature.

CURRENT YIELD YARDSTICKS
(Standard & Poor's Indexes)

	Oct. 14, 1959	*1958-59 Range*		*1957 Range*	
		High	*Low*	*High*	*Low*
Utility Bonds—A1+	4.69%	4.70%	—3.58%	4.38%	—3.70%
—A1	4.73	4.76	—3.61	4.41	—3.73
—A	4.91	4.94	—3.85	4.70	—3.96
—B1+	5.10	5.13	—4.20	5.21	—4.21
Preferred Stocks*	4.80	4.87	—4.26	4.86	—4.42
Utility Common Stocks	3.95	4.98	—3.71	5.44	—4.73

*Twelve industrial and two utility issues (high-grade).

• Includes $622,000 of Common Stock sold Privately.
Esseo Services Incorporated, Business Management and Financial Department, October 7, 1959 - AVR

New Hopes for Fusion?

DR. JAMES L. TUCK and Dr. John Marshall of the Los Alamos Laboratory have developed two new gadgets which seem to promise noteworthy progress on the long road toward converting the hydrogen bomb into economic generation of controllable power. The first device is a magnetic gun devised to drive a beam of deuterium (double hydrogen) plasma into the magnetic field; the second is a "picket fence" type of magnetic bottle with an irregular shape which helps to keep the plasma stable and reduce the tendency to writhe, which had been one of the obstacles in the past to keeping the ultrahot plasma away from the inside walls of the container..

It is difficult as yet to appraise the actual progress accomplished with the new devices, but they mark a forward step.

ACCORDING to William L. Lawrence, science editor of *The New York Times*, "It is expected that the 'picket fence' magnetic bottle will retain the deuterium plasma, fired into it by the powerful new plasma accelerating machine, at a greater density and for longer periods of time than any other type of magnetic bottle developed so far."

A prototype machine using the new apparatus will be completed in about a month and a more powerful second-generation device is also under construction.

RECENT FINANCIAL DATA ON GAS UTILITY STOCKS

Annual Rev. (Mill.)			*10/14/59 Price About*	*Dividend Rate*	*Approx. Yield*	*Recent Share Earnings*	*% Increase*	*Aver. Incr. In Sh. Earn. 1953-58*	*Price-Earns. Ratio*	*Div. Payout*	*Approx. Common Stock Equity*
		Pipeline and Integrated Systems									
$ 5	O	Ala. Tenn. Nat. Gas	25	$1.20(k)	4.8%	$1.46Je	8%	11%	17.1	82%	40%
205	S	American Nat. Gas	57	2.60(L)	4.6	4.22Je	14	7	13.5	62	39
76	A	Arkansas Louis. Gas ...	60	1.20	2.0	3.08Je	46	55	19.5	39	53
55	O	Colo. Interstate Gas	41	1.25	3.0	2.71Je	NC	8	15.1	46	24
427	S	Columbia Gas System ..	22	1.00	4.5	1.31Je	D10	18	16.8	76	42
7	O	Commonwealth Gas	7	—	—	.49De	22	—	14.3	—	77
19	O	Commonwealth N. G. ...	23	1.00	4.3	1.57Je	D2	10	14.7	64	47
11	S	Consol. Gas Util.	21	.90	4.3	1.60Jy	3	7	13.1	56	57
304	S	Consol. Nat. Gas	48	2.10	4.4	3.07Je	D11	9	15.6	68	60
19	O	E. Tenn. Nat. Gas	11	.60	5.5	.86Je	D8	16	12.8	70	25
368	S	El Paso Nat. Gas	29	1.30	4.5	1.61De	D2	—	18.0	81	17
50	S	Equitable Gas	38	1.60	4.2	2.62Je	17	5	14.5	61	44
34	O	Houston N. G.	28	.80	2.9	1.45Jy	D15	9	19.3	55	18
21	O	Kansas Nebr. Nat. Gas .	39	1.80(f)	4.6	3.07Je	21	9	12.7	59	36
113	S	Lone Star Gas	40	1.80	4.5	2.31Je	D4	8	17.3	78	43
77	S	Miss. River Fuel	35	1.60	4.6	2.08Ma	NC	5	16.8	77	48
28	S	Montana Dakota Util. ..	29	1.00	3.4	1.77Je	11	12	16.4	56	29
26	O	Mountain Fuel Supply ..	26	1.20	4.6	1.76Je	7	3	14.8	68	51
94	S	Natl. Fuel Gas	23	1.15	5.0	1.91Je	37	6	12.0	60	56
139	S	Northern Nat. Gas	28	1.40	5.0	1.71Je	—	8	16.4	82	31
43	S	Oklahoma Nat. Gas	27	1.24	4.6	1.93Jy	18	5	14.0	64	34
121	S	Panhandle East. P. L. ..	47	1.80	3.8	2.74De	—	2	17.2	66	40
15	O	Pennsylvania Gas	25	1.20	4.8	2.13De	D2	20	11.7	56	59
188	S	Peoples G. L. & Coke ..	58	2.30	4.0	3.84Au	25	4	15.1	60	41
26	O	Pioneer Nat. Gas	40	1.60	4.0	2.10De	D1	9	19.0	76	43
104	S	Southern Nat. Gas	36	2.00	5.6	2.07Jy	NC	—	17.4	97	43
41	O	Southern Union Gas	25	1.12	4.4	1.40De	D9	8	17.9	80	27
402	S	Tenn. Gas Trans.	32	1.40	4.4	1.70Au	3	13	18.8	82	21
266	O	Texas East. Trans.	28	1.40	5.0	1.98Je	D25	13	14.1	71	21
104	S	Texas Gas Trans.	30	1.40	4.7	2.14Je	13	3	14.0	65	33
115	O	Transcont. Gas P. L. ...	23	1.00(b)	4.3	1.49Je	2	13	15.4	67	19

Annual Rev. (Mill.)		(Continued)	10/14/59 Price About	Dividend Rate	Approx. Yield	Recent Share Earnings	% Increase	Aver. Incr. In Sh. Earn. 1953-58	Price-Earns. Ratio	Div. Payout	Approx. Common Stock Equity
318	S	United Gas Corp.	34	1.50	4.4	2.36Je	D6	4	14.4	64	42
		Averages			4.3%		5%	9%	15.6	70%	
		Retail Distributors									
32	S	Alabama Gas	32	$1.60	5.0%	$1.99Je	D27%	11%	16.1	80%	36%
53	O	Atlanta Gas Light	37	1.80	4.9	2.40Jy	D12	9	15.4	75	34
3	O	Berkshire Gas	19	1.00	5.3	1.39Je	5	6	13.7	72	41
7	A	Bridgeport Gas	32	1.68	5.3	2.63Je	24	7	12.2	61	46
6	O	Brockton-Taunton Gas .	18	1.00	5.6	1.30De	10	18	13.8	77	46
79	S	Brooklyn Union Gas	58	2.40	4.1	3.28Je**	1	8	17.7	73	44
41	O	Central Elec. & Gas	22	1.05	4.8	1.78Je	15	9	12.4	59	17
13	O	Cent. Indiana Gas	14	.80	5.7	.77Je	D30	13	18.2	104	57
6	O	Chattanooga Gas	6	.35	5.8	.38F	D31	13x	15.8	92	43
15	O	Elizabethtown Cons. Gas	38	1.60	4.2	2.45Jy	D23	13	15.5	66	78
68	O	Gas Service	31	1.52	4.9	2.48Je	D13	11	12.5	61	36
9	O	Hartford Gas	43	2.00	4.7	2.45Je	16	—	17.6	82	51
3	O	Haverhill Gas	29	1.40	4.8	2.15Se	10	11	13.5	65	53
20	O	Indiana Gas & Water ...	23	1.00(b)	4.3	1.50Au	D2	9	15.3	67	45
52	S	Laclede Gas	20	.90	4.5	1.13Je	D17	5	17.6	80	34
6	O	Mich. Gas Util.	26	1.05	4.0	1.53Je	16	4	17.0	69	34
44	O	Minneapolis Gas	30	1.50	5.0	2.07Je	12	5	14.5	72	46
17	O	Miss. Valley Gas	25	1.20	4.8	2.01Je	D16	7	12.4	60	34
6	O	Mobile Gas Service	26	1.10	4.2	1.23Je	D35	6	21.1	90	37
8	O	New Haven Gas	38	1.90	5.0	3.07De	30	11	12.4	62	67
15	O	New Jersey Nat. Gas ...	48	1.80	3.8	2.66Je	D2	—	18.0	68	34
91	O	No. Illinois Gas	31	1.00	3.2	1.74Au	25	—	17.8	57	54
10	O	North Penn Gas	12	.60	5.0	.81De	4	10	14.8	74	60
18	O	Northwest Nat. Gas	17	.72	4.2	*1.24Je**	32	—	*13.7	58	36
285	S	Pacific Lighting	49	2.40	4.9	2.80Ma	5	8	17.5	86	42
11	O	Piedmont Nat. Gas	17	.50	2.9	.76Je	D22	15	22.4	66	31
2	O	Portland Gas Lt.	17	.75	4.4	2.31De	128	21	7.4	32	27
10	A	Providence Gas	10	.56	5.6	.64Jy	D1	5	15.6	88	50
4	A	Rio Grande Valley Gas ..	4½	.16	3.6	.38Je	20	9	11.8	42	55
6	O	So. Atlantic Gas	15	.80	5.3	1.22Se	27	5	12.3	66	32
14	S	So. Jersey Gas	25	.90	3.6	1.26Je	9	14	19.8	71	50
34	S	United Gas Impr.	53	2.40	4.5	3.41Je	16	5	15.6	70	54
60	S	Wash. Gas Light	47	2.24	4.7	3.69Je	7	10	12.7	61	37
14	O	Wash. Nat. Gas	21	(g)	—	1.24Je	135	5	17.0	—	40
10	O	Western Ky. Gas	17	.60(i)	3.5	1.36Je	D10	3	12.5	44	41
		Averages			4.6%		9%	10%	15.2	70%	

RECENT FINANCIAL DATA ON TELEPHONE, TRANSIT, AND WATER STOCKS

Annual Rev. (Mill.)			10/14/59 Price About	Dividend Rate	Approx. Yield	Recent Share Earnings	% Increase	Aver. Incr. In Sh. Earn. 1953-58	Price-Earns. Ratio	Div. Payout	Approx. Common Stock Equity
		Communications									
		Bell System									
$6,771	S	Amer. T. & T. (Cons.) .	79	$3.30	4.2%	*$5.05Au	12%	4%	*15.6	65%	64%
329	A	Bell Tel. of Canada	43	2.00	4.7	2.14De	7	—	20.0	93	64
47	O	Cin. & Sub. Bell Tel. ...	91	4.50	4.9	5.15De	5	—	17.7	88	76
255	A	Mountain Sts. T. & T. ..	164	6.60	4.0	9.55My	7	4	17.2	69	76
354	A	New Eng. T. & T.	186	8.00	4.3	10.84Je	21	6	17.2	74	62
937	S	Pacific T. & T.	28	1.14	4.1	1.35Au	16	1	20.7	84	61
119	O	So. New Eng. Tel.	44	2.20	5.0	2.75Je	13	7	16.0	80	61
		Averages			4.5%		12%	3%	17.8	79%	
		Independents									
6	O	Anglo-Canadian Tel. ...	34	$1.20	3.5%	$3.15Je	D1%	21%	10.8	38%	52%

Annual Rev. (Mill.)		(Continued)	10/14/59 Price About	Dividend Rate	Approx. Yield	Recent Share Earnings	% Increase	Aver. Incr. In Sh. Earn. 1953-58	Price-Earns. Ratio	Div. Payout	Approx. Common Stock Equity
45	O	British Col. Tel.	43	2.00	4.7	2.11Je	1	—	20.4	95	28
4	O	Calif. Inter. Tel.	15	.70	4.7	.98Je	12	NC	15.3	71	24
22	O	Calif. Water & Tel.	26	1.28	4.9	1.79De	36	2	14.5	72	37
20	O	Central Tel.	27	1.00(b)	3.7	1.94Je	7	5	13.9	52	33
5	O	Commonwealth Tel.	18	.90	5.0	1.35Je	D6	15	13.3	67	35
5	O	Florida Tel.	29	1.00	3.1	1.21My	21	—	26.4	83	42
552	S	General Tel. & Elec.	70	2.20	3.1	3.11Je	7	NC	22.5	71	34
21	O	Hawaiian Telephone	19	1.00	5.3	1.25Au**	11	4	15.2	80	44
8	O	Inter-Mountain Tel.	16	.80	5.0	.91De	D3	—	17.6	88	54
23	S	Rochester Tel.	25	1.00	4.0	1.59Je	16	4	15.7	63	33
11	O	Southwestern St. Tel.	24	1.20	5.0	1.36Je	D14	—	17.6	88	37
38	O	United Utilities	33	1.25	3.8	1.64De	6	3	20.0	76	36
16	O	West Coast Tel.	25	1.20	4.8	1.56Je	21	—	16.0	77	32
255	S	Western Union Tel.	39	1.20	3.1	1.89De	D7	—	20.6	63	85
		Averages			4.2%		7%	8%	17.3	71%	
		Transit Companies									
20	O	Baltimore Transit	10	$1.00	10.0%	$ .58De	D43%	—	17.2	172%	48%
12	O	Cincinnati Transit	7	.30	4.3	.31De	D40	—	22.6	97	54
65	S	Fifth Ave. Lines	14	—	—	.02De	D99	—	—	—	75
305	S	Greyhound Corp.	21	1.00(o)	4.8	1.23De	1	—	17.1	81	50
25	S	Nat. City Lines	28	2.00	7.1	1.69De	D38	—	16.6	118	94
13	O	Niagara Frontier Trans.	10	.60	6.0	.10De	D87	—	—	—	67
17	A	Pittsburgh Rys.	13	.25	1.9	.32Je	NC	—	—	78	90
6	O	Rochester Transit	6	.40	6.7	.86De	34	9%	7.0	47	100
21	O	St. Louis P. S.	11	1.00	9.1	.68De	4	—	16.2	147	97
14	S	Twin City R. T.	10	—	—	.24De	D70	—	—	—	65
19	O	United Transit	7	.60	8.6	.75De	D4	—	9.3	80	55
		Averages			6.5%		(D)34%	—	15.1	102%	
		Water Companies									
		Holding Companies									
43	S	American Water Works.	14	$ .60	4.3%	$1.18Je	22%	—	11.9	51%	19%
		Operating Companies									
5	O	Bridgeport Hydraulic	32	$1.70(f)	5.3%	$1.75De	D15%	2%	18.3	97%	53%
16	O	Calif. Water Service	25	1.20(j)	4.8	1.75Au	12	1	14.3	69	36
4	O	Elizabethtown Water	49	2.00	4.1	3.78De	D3	11	13.0	53	59
11	S	Hackensack Water	45	2.00	4.4	3.29De	D5	—	13.7	61	35
9	O	Indianapolis Water	25	1.00	4.0	1.22De	D4	5	20.5	82	36
6	O	Jamaica Water	42	2.20	5.2	3.24Je	D2	1	13.0	68	27
5	O	New Haven Water	65	3.40	5.2	3.32De	9	5	19.6	102	61
2	O	Ohio Water Service	27	1.50(b)	5.6	1.77Je	D14	—	15.3	85	31
9	O	Phila. & Sub. Water	51	1.60(b)	3.1	2.75Je	D7	—	18.5	58	27
2	O	Plainfield Un. Water	61	3.00	4.9	4.31Ma	D3	3	14.2	70	64
5	O	San Jose Water	33	1.30(f)	3.9	2.39Au	45	12	13.8	54	41
11	O	Scranton-Springbrook	20	1.00	5.0	1.65Je	D1	4	12.1	60	25
5	O	South. Calif. Water	19	.80	4.2	1.20Je	6	6	15.0	67	33
4	O	W. Va. Water Service	22	.68(d)	3.1	1.47Je	D10	—	15.0	46	18
		Averages			4.5%		D1%	4%	15.5	70%	

A—American Stock Exchange. O—Over-counter or out-of-town exchange. S—New York Stock Exchange. Ja—January; F—February; Ma—March; Ap—April; My—May; Je—June; Jy—July; Au—August; Se—September; Oc—October; N—November; De—December. NC—Not comparable. NA—Not available. D—Decrease. *On average shares. **Includes tax savings from accelerated depreciation. (a) Adjusted to eliminate 13 cents per share of nonrecurring tax savings. (b) Also stock dividend in 1958. (d) Also one per cent stock dividend quarterly. (e) Also 10 per cent stock dividend May 19, 1958. (f) Includes extras. (g) Five per cent stock dividend April 10, 1959. (i) Also 5 per cent stock dividend December 29, 1958. (j) Also 5 per cent stock dividend March 19, 1959. (k) Also 20 per cent stock dividend March 9, 1959. (L) Also 10 per cent stock dividend June 10, 1959. (n) Excludes profit realized on sale of Los Angeles Transit $3.81 per share. (o) Also 5 per cent stock dividend June 30, 1959. x—1952-57.

What the State Commissioners Are Thinking About

Excerpts and digests from the opinions expressed in reports and addresses at the annual convention of the National Association of Railroad and Utilities Commissioners in Philadelphia, Pennsylvania, from October 12th to 15th, 1959.

On Accounting Regulation

"OVER the past several years, the NARUC committee has developed revised Uniform Systems of Accounts for electric, gas, and water utilities. In November, 1958, the association adopted resolutions that the revised systems of accounts for electric and gas utilities be recommended to the commissions for adoption in their respective jurisdictions, as had previously been done for the water system of accounts. In harmony with these recommendations, the Federal Power Commission in April, 1959, initiated proposed rule-making proceedings looking to adoption by the commission of revised systems of accounts for classes A and B public utilities and licensees and natural gas companies, conforming to the systems of accounts recommended by the NARUC. The rule-making notice proposes that the revised systems of accounts become effective as of January 1, 1961, and provides that any interested person may submit views and comments on or before September 30, 1959. Following consummation of these rule-making proceedings, it is intended that similar proceedings be initiated for the separate condensed systems of accounts for class C and class D public utilities and licensees and natural gas companies."

—*Report of the Committee on Co-operation between State and Federal Commissions, Nat B. Knight, Jr., of Louisiana, chairman.*

On Commission Secretarial Duties

"THE secretaries of the regulatory commissions are acutely conscious of the expanded volume of work being handled by commissions throughout the country. The activities have been enlarged and the tempo has been accelerated in all phases of regulatory work.

"The quantity of mail has increased, the number of incoming telephone calls has multiplied; the volume of applications for permits and certificates has expanded and the number of persons calling at commission offices has risen.

"Meanwhile, the cost of our operations

has been increased by the inflationary economy of our era.

"We are intensely conscious that public relations is an important facet of the many activities and responsibilities of commission secretaries. We are also cognizant that public relations is essentially human relations. The same rules and precepts that apply to the reciprocal relations between people apply with equal force in the field of public relations."

—*Report of the Secretarial Offices Committee, Edward T. Kaveny of Wisconsin, chairman.*

On Congressional Encroachment on State Authority

"IN every sphere of human activity we are today faced with continuing efforts to concentrate more and more power in the federal government with the resultant removal of control over our destiny from the hands of the responsible individual citizen and local government agencies. The state regulatory commissions are by no means exempt from this danger—in fact, we sometimes seem to be the special targets of the Congress and the federal courts, particularly in the field of transportation. The initial interpretation of the Commerce Clause by the Supreme Court giving to the federal government jurisdiction over all agencies engaged in 'interstate commerce' (although some such agencies were not even dreamed of when the Commerce Clause was written), coupled with the conveniently nebulous theories of 'implied powers' and 'burden on interstate commerce' have given rise to a number of court decisions and congressional acts transferring to the federal government authorities rightfully belonging to the states. I am sure you are all familiar with the most important of the recent such decisions and acts—such as the California case (California Public Utilities Commission *v.* United States [23 PUR3d 55] 2 L ed 2d 470) which denied to the states minimum rate control over intrastate transportation furnished to agencies of the United States government (and don't forget the warning so aptly expressed by our colleague, Judge McKeage, in his recent review of that decision that this precedent could very easily reach into the fields of power and communications)—and the Transportation Act of 1958 which stripped from the state commissions much of our former control over railroad passenger services.

"The first session of the 86th Congress was little different from its predecessors and more blows were aimed at state regulatory authority.

"Among the statutes proposed this year which would have specifically reduced state commission authority were HR 5175 which would amend the Interstate Commerce Act to prevent a state from requiring an interstate motor carrier operating within its borders to register its certificate, identify its vehicles, file surety bonds and policies of insurance, or otherwise comply with the economic regulations of such state, and S 2417 which would amend the Interstate Commerce Act by eliminating the second proviso of § 206(a) (1) whereunder a properly certificated intrastate motor carrier operating solely within one state may now, by compliance with the registration procedure of that proviso, transport interstate commerce within the limits of its intrastate certificate.

"However, by far the most important action taken by the 86th Congress in relation to state regulatory jurisdiction was not a specific statute but was the authority granted to the Senate Committee on Interstate and Foreign Commerce under Senate Resolution 29 to conduct a 'comprehensive transportation study.' The very first stated objective of that study calls for survey of 'the need for regulation of transportation under present-day conditions and, if there is need for regulation, the type and character of that regulation.' . . ."

—MATT L. MCWHORTER, *Chairman, Georgia Public Service Commission.*

On Corporate Financing

"BUSINESS recovery has been the most significant economic development since this committee's last report. Hence, the full impact of developments in the field of corporate finance can perhaps best be reviewed in the light of these economic high

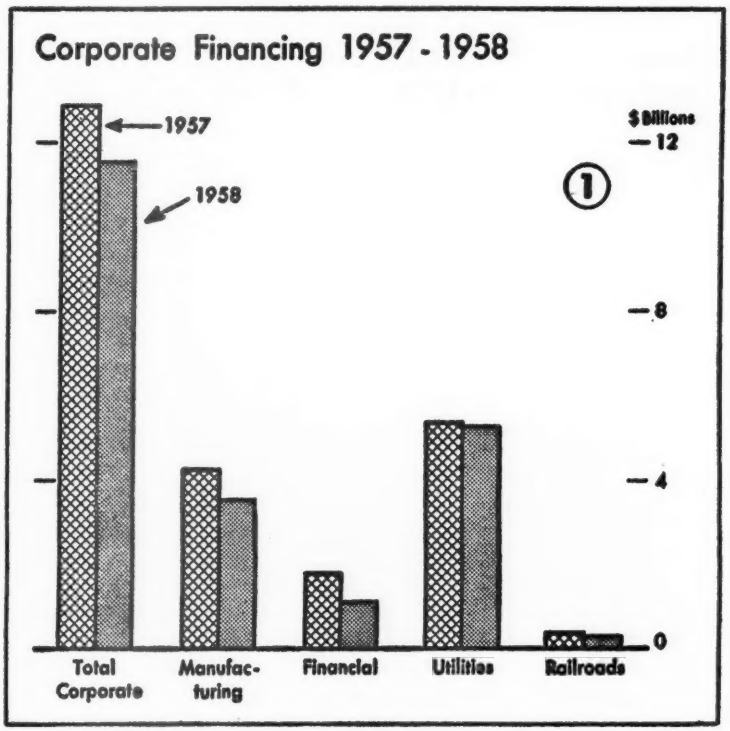


CHART 1

lights. At the time of the last report, the United States economy was just emerging from the third and sharpest recession in the postwar era. The downturn bottomed out in the second quarter of 1958 and recovered strongly in the second half. Continued improvement has been evident in 1959. . . .

"Expectations of a sustained demand for the products of industry in 1959, plus the optimistic outlook for the 1960's, have led to increased budgets for new plant and equipment. Concurrently, the demand for utility services is climbing to new peaks. The requirements of the American public for more and better public utility services have reached levels not contemplated a few years ago.

"As shown in Chart 1 corporate financing was lower in 1958 than in 1957. This was due mainly to the manufacturing and financing industries. Manufacturing companies curtailed both capital outlays and security financing. Because borrowing by consumers declined, sales and finance corporations needed less funds. In contrast, the experience in the utility field was quite different. Expenditures for plant and equipment were reduced hardly at all. Utility companies, of necessity, had to continue to finance the major part of their construction outlays in the capital markets.

"The drop in equity financing in 1958 accounted for virtually the entire decline in total corporate financing. As shown by Chart 2, equity financing dipped in 1958 to about two-thirds its 1957 level. In contrast, bond financing was virtually the same in 1958 as in 1957. The substantially reduced volume of equity financing by manufacturing industry accounted for most of the decline in total corporate financing.

"With heavier construction programs planned for 1959, industry will require substantial funds from the capital markets. At the same time, corporations are faced with

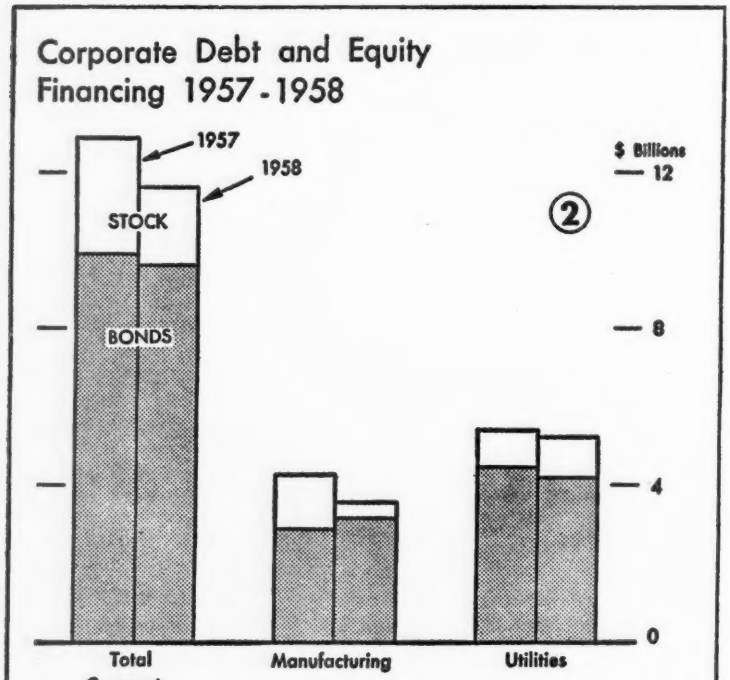


CHART 2

substantially higher capital costs than in 1958. Further evidence of the strong demand for capital funds is shown by the situation in the U. S. Treasury bond market. . . .

"Interest rates are now at the highest level since the depression period of the 1930's. As this report is written, the U. S. economy is suffering the effects of a nation-wide steel strike. As a result, industry is faced with the prospect of further inflation, triggered by 'cost-push' in the nation's basic industries. . . .

"The cost of debt capital has been increasing substantially in the postwar period and this trend continued during 1958.

". . . debt costs have been increasing steadily and at the present time, midsummer of 1959, are in the 5 per cent to 5¼ per cent range.

"Equity costs are less easily determined. . . . are comprised of two elements, (1) pure interest and (2) compensation for risk. With the rising interest costs, the interest factor in equity costs has also risen. However, equities do provide an inflation hedge not available in fixed income securities. Witness the switch from the latter to the former. It is therefore possible that the risk portion of equity costs may have declined. Determining the exact level of equity costs requires a great deal of analytical skill, experience, and judgment. Time and space will not permit any detailed discussion of this matter in this report. It is recommended, however, that commissions give utmost attention to the problem of equity costs.

"With the outlook for continued inflation, more attention is being given to this subject than ever before and utilities will have to offer their investors opportunities commensurate with alternative investment in order to obtain the necessary funds. That, of course, points out the need for commissions to give attention to the other two tests laid down in the Bluefield and Hope cases; namely, maintenance of the credit and integrity of the investment and comparable earnings of investments of similar risk.

"In closing this committee suggests that commissions, as well as utilities, take careful consideration of the economic climate in today's world in setting rates. The postwar period has been one of tremendous growth attendant with a rising price level as a result of the postwar inflation. The prospect for the future is for continuation of the past pattern of growth and inflation. In order to maintain our position in world affairs the United States economy will have to prosper and grow. As has been demonstrated by the earnings of unregulated business, during periods of growth earnings must necessarily be at high levels, otherwise new capital will not be injected into the economy.

"In the growing economy forecast for the coming decade, utilities must be encouraged to play a significant rôle. A strong and prospering utility industry is essential to a strong and prospering nation."

—*Report of Committee on Corporate Finance, Francis T. Mylott of New York, chairman.*

On Cost of Service

"MR. [RALPH E.] PURUCKER'S group, which is studying methods of determining the cost of utility service by classes, has been pursuing its work of separating costs into categories associated with commodity units, demand, and customers. The subcommittee has encountered many difficulties and has been unable to reach a decision as to the path which it should follow. In an effort to get some assistance in charting his future course, Mr. Purucker recently sent questionnaires to many of the regulatory commission engineers asking for opinions on certain cost-of-service problems.

"Mr. Purucker compiled a summary of the replies to his questionnaire and it was the general consensus of the committee that there was sufficient interest and sufficient uniformity of opinions to warrant a continuation of the study by the subcommittee. The results of the questionnaire are included in this report in Appendix B."

—*Report of the Committee on Engineering, Hugh H. Hunter of Maryland, chairman.*

On Destruction of Records

"DURING the year the commission [Securities and Exchange Commission] has had occasions to contact state commissions and the Federal Power Commission in connection with requests by registered holding companies for authorization to destroy certain records. Under the commission's Uniform System of Accounts for public utility holding companies the holding companies are not permitted to destroy any books or records without first obtaining the consent and approval of the commission. One holding company, which was in dissolution, had sought authority to destroy its records prior to making the final liquidating distribution to security holders. This holding company formerly controlled 17 public utility subsidiaries operating in 14 states. In order to safeguard the needs of all of the rate regulatory authorities concerned the staff of this commission wrote to the state commissions involved and to the Federal Power Commission seeking their views. Responses were received from eight state commissions indicating they had no objection to the destruction of the records.

"The Federal Power Commission expressed an interest in certain of the records and the staff of the commission made arrangements with the law firm, which formerly acted as counsel to the holding company, whereby the records were to be retained for a period of four years."

—*Report of the Committee on Co-operation between State and Federal Commissions, Nat B. Knight, Jr., of Louisiana, chairman.*

On "Featherbedding"

"OF THE many important problems confronting the common carrier transportation industry today probably the foremost involves the charges and countercharges

of 'featherbedding.' These charges have become most serious in the railroad field and are growing in importance in other fields of transportation. There is urgent need for solution of this problem and the best approach seems to be a comprehensive study by an impartial group who could fully investigate the charges of both labor and management. Another of the committees of the National Association of Railroad and Utilities Commissioners—the Railroad Problems Committee—has undertaken studies in this field and such a committee from the membership of our association should be acceptable to both sides as a nonbiased, public-minded group well-qualified to sift the facts of these charges and come forth with specific recommendations for any necessary corrections of work, rules, or practices."

—Report of the Committee on Service and Facilities of Transportation Agencies, Ray H. Thompson of Iowa, chairman.

On Federal Power Act Changes

"THE Special Committee on Legislation Amending the Federal Power Act was established by this association in 1954 and has been continued to date.

"The committee initially reviewed possible and proposed amendments to Part I of the Federal Power Act and subsequently recommended endorsement of three amendments which were designed to accomplish the following objectives:

"(1) To amend § 10(f) to provide that changes shall be paid by federal power projects which are benefited by water-control improvements constructed by other parties.

"(2) To amend § 10 to increase the standard for waiver of license provisions from 100-horsepower capacity to 2,000-horsepower capacity.

"(3) To clarify the take-over provisions in § 15 so as to establish the preferment of the holder of the license at the time of expiration of the license."

—Report of the Special Committee on Legislation Amending the Federal Power Act, David M. Brackman of Massachusetts, chairman.

On Federal-State Commission Co-operation

"IT is a very simple matter indeed to demonstrate that good state commission relationships with a federal agency promote the good co-operation of that agency with state officials in matters of common interest—and vice versa. Perhaps the federal agency with which our relationship has deteriorated to the lowest level is the Interstate Commerce Commission. The results of that deterioration are shown not only by the poor co-operation we receive from that commission in matters of common concern but also by the fact that the Interstate Commerce Commission actively promotes federal legislation looking toward transfer of state jurisdiction to it—the most current example of such promotion being the advocacy by the Interstate Commerce Commission in the 86th Congress of the passage of S 2417. . . .

"Now just what can we do to overcome our own deficiencies, to promote closer co-operation with the federal agencies, and to head off further federal invasion into regulatory fields rightfully belonging to the states?

"The answer is threefold. First: self-improvement, through elevation of state commission technical standards, more effective interchange of knowledge and ideas between the states on both commissioner and staff levels, and more active promotion of the abilities and activities of our membership in their committee work. Second: the preservation, where good, and the improvement where needed, of our relations with the federal agencies through insistent and sincere offers of co-operative assistance in fields of mutual interest and by taking a more active part in the selection of nominees for appointment to those agencies; and third: collective opposition before Congress and the courts when efforts are made to further invade the field of state regulatory jurisdictions. . . .

"Finally, there is the matter of presenting, through unified collective efforts, more effec-

tive opposition to further attempts to reduce the scope of the state regulatory jurisdictions. It seems that every time one of these matters arises, either in the courts or in Congress, all of our members are against the proposals in principle but the burden falls usually on the same few commissions to actually prepare and present the opposition of the states. This failure to collectively resist these actions has been the probable cause of most of our defeats. While the association as an organization can oppose or support any given measure or court proceeding, such action is by no means as effective as the concerted action of the individual states. The failure to so resist was specifically used against us in the floor debate on the Transportation Act of 1958 where one Senator stated—and correctly so—that representatives of only two state commissions had appeared at the public hearings in opposition to that bill. This is a fertile ground for improvement and it would be most appropriate for this association to have a Standing Committee, large in membership and nation-wide in character, specifically assigned the duty of promoting more effective opposition to such measures which the membership concludes to be not in the interest of the membership and the public."

—MATT L. MCWHORTER,
Chairman, Georgia Public Service Commission.

On Inflationary Impact

"IT is my belief that some inflation will be present in our economy for the foreseeable future. Public utilities and their manufacturing suppliers have done a wonderful job in reducing unit cost and increasing operating efficiency. Whether the point of diminishing returns has been reached remains to be seen. The answer will depend to a great extent on the ingenuity of those in the industry and of their manufacturing suppliers. If that point has been reached the effects of inflation will be more pronounced in the future. . . .

"Let me re-emphasize the vital need to educate the public to the requirements of fair regulation in a period of continuing inflation. I hold that this is a duty of the utilities as it is their duty to take the lead in making available through legislative bodies the necessary funds and personnel in order that regulatory agencies may fulfill their functions under the law.

"I believe that regulation has performed well in coping with problems brought about by inflation. Where it has failed, this failure can be attributed to a lack of education or understanding on the part of the public and the regulatory agency or an inadequate presentation of the problem by utilities."

—ALAN S. BOYD,
Member, Florida Railroad and Public Utilities Commission.

"NATURALLY, being intimately concerned with the financing of a very large portion of the business of the nation, the SEC has followed with intense interest the impact of inflation upon the securities market generally. As the agency having some regulatory jurisdiction over the corporate activities of certain important gas and electric utilities, it is especially interested in its effect upon this particular segment of American business. In the case of public utilities, unlike that of industry in general, the major portion of the funds required for capital expansion must be supplied from external sources through the sale of securities in the capital markets, rather than from internal sources, such as depreciation accruals and retained earnings. From the very nature of its property, the public utility industry accrues depreciation at a substantially lower rate than does the manufacturing industry in general, and there has never been any tendency for regulatory authorities to approve rates which would allow earnings materially in excess of those necessary to support reasonable dividend declarations. . . .

"Informed opinion in electric utility circles seems to be divided as to what must be done in the future to consolidate the gains heretofore made and to continue to progress. One group, perhaps rather pessimistically, believes that technological advances will not be adequate in the future to overcome mounting inflation, and that substantial rate increases must be granted by the state regulatory commissions, and they call for emphasis on reproduction values and allowances of so-called economic depreciation for ratemaking purposes. The other group, perhaps

rather optimistically, argues that the electric utilities do not need to rely primarily on rate increases but must and can meet inflation on two fronts; *i.e.*, by technological advances and by load growth.

"I do not pretend to say which of these groups is right. Perhaps history will prove they both have some substance in their arguments. Neither am I prepared to forecast whether current events will result in a continued inflationary trend. However, I cannot believe that the existing price level is going to deteriorate radically in the near future. The recession of 1958, if it did nothing else, would seem to have proved that much. Personally, postwar history convinces me that the pressures which have operated to devalue the dollar for the past ten or fifteen years are not going to disappear overnight, and that the problems I have mentioned will remain for some time to come. Regardless of the extent of future inflation, however, I do feel that it is incumbent on us, as regulatory agencies acting within our respective jurisdictions, to be sufficiently elastic in our points of view so that the public utilities of the country can meet the financial problems raised by the inflationary cycle as they may become more pressing and, perhaps, before they become acute."

—EDWARD N. GADSBY,
Chairman, Securities and Exchange Commission.

"GROWING inflation and higher prices for capital will contribute to higher costs of utility service in the future. With an ever-changing condition in the national economy, considerations in the fixing of rates must be prospective as well as retrospective. To enable regulatory commissions to substitute the long-term interest of all for the immediate self-interest of a few, applicant utilities must submit to the reviewing commission a broader picture than the formerly accepted test year and date certain will provide. Regulatory commissions can make only such disposition of matters as the record in the case will substantiate."

—*Report of the Committee on Rates of Public Utilities, Paul E. Weiland of Ohio, chairman.*

On Judicial Encroachment on State Authority

"OUR difficulties this year were not confined to Congress—the United States Supreme Court again joining in the attack on state jurisdiction by holding, in the Service Storage case (Service Storage & Transfer Co., Inc. *v.* Commonwealth of Virginia, U.S.S.C. Dkt. No. 92—October term, 1958 [28 PUR3d 336]), that a state could not prevent a motor carrier from transporting traffic between two points in that state via routes through another state if the carrier possessed a certificate or certificates from the Interstate Commerce Commission authorizing such routes unless the Interstate Commerce Commission itself declared the operation in question to not be 'bona fide interstate' in character. Since there is little hope of ever getting the Interstate Commerce Commission to declare one of its own certificates to be not 'bona fide,' we now are faced with the prospect of that commission having the power to authorize a carrier to handle what is, under any reasonable interpretation, purely intrastate commerce.

"Now let us consider the causes of our difficulties in this field.

"First, there are the complaints from the various regulated industries of unfair or unreasonable treatment in state commission actions affecting those industries. Many, if not most, of these accusations are unfounded but there have been criticisms of lack of technical training, knowledge, and experience on both staff and commissioner levels which persist and which are very effective in influencing congressional transfer of jurisdiction to the allegedly better-trained and more efficient federal agencies."

—MATT L. MCWHORTER,
Chairman, Georgia Public Service Commission.

On Legislative Action

"THE committee believes that state commissions must study and express opinions to Congress regarding pending legislation. They must participate in hearings

before the various committees but particularly the committees in both the House and Senate on Interstate and Foreign Commerce. This action must be taken not necessarily by the association as such but more particularly each individual state commission. In many states, the state commission is the only body not having any particular ax to grind that can speak for the citizens and industry of the state.

"There should be active interest and participation at hearings now going on or to be scheduled. So far various segments of the transportation industry have been very active in Congress but there have been few, if any, speaking for the general public as a whole. That should be a duty of the state commissions.

"More attention should be paid, and something done about, recommendations made by various committees. This should apply particularly to the recommendations of the National Conference of State Commission Transportation Specialists. It is our considered opinion that if we, as individual commissions, and as a national association, will encourage and support the work of this national conference we will have fostered and preserved a sound system of transportation in the national public interest. Too often recommendations are made by various committees and that is the last that is heard of it. It is hoped that the National Association will take the necessary action to implement some of these recommendations. We should be more aggressive in attempting to secure greater uniformity as between states in the various aspects of regulation of carriers of all types."

—*Report of the Committee on Progress in the Regulation of Transportation Agencies, Ernest D. Nelson of North Dakota, chairman.*

On Nuclear Energy

"THE first report of the Committee on Nuclear Energy to this association was that of a five-man special committee presented to the 1953 annual convention in New York. Subsequently the committee was changed to an eleven-man standing committee and on two different occasions it has presented panel discussions to annual meetings of this association.

"At the time the first committee was formed, the use of nuclear energy was an uncharted field for state commissions. Also it was a field in which information was greatly restricted by national security requirements. Through the intervening years, your committee has gathered information, studied developments, and reported annually to this association, phases of development which seemed likely to be of interest and concern to regulatory commissions. Presently there is a wealth of published information concerning the use of nuclear energy in the electric industry from which commissioners and the members of their staffs may determine the present status of development. . . ."

—*Report of the Committee on Nuclear Energy in the Electric Industry, George P. Steinmetz of Wisconsin, chairman.*

On the "Missouri Plan" for Selecting Commissioners

"FROM the early 1900's to the present, there have been arguments whether the appointive method or the elective method of choosing commissioners is the better. There have been different trends from one method to the other at different times in the history of regulatory commissioners.

"Apparently little or no consideration has been given to some method which would incorporate the best features of both methods.

"The legal profession has experienced the same kind of problem with the selection and tenure of judges. Slightly more than ten years ago, a system of selecting judges was devised after much thought and research that combined features of both the appointive and elective systems. This new plan is known as the 'Missouri Plan.'

"The 'Missouri Plan' recognizes that people should be allowed to elect their government officials but takes into account the important fact that only very few voters on a statewide ticket know what are the qualifications or who is qualified for commissioner or judge. Voters cannot tell by reading a man's name on a ballot or seeing his picture on a

fence post whether he possesses the essential qualities for one of these important and responsible positions.

"Under the 'Missouri Plan' only qualified persons are appointed to office and the voter's right of electing his government official is preserved."

—*Report of the Committee on Regulatory Procedure, Joseph J. Brown of Nebraska, chairman.*

On Rate Base Valuation

"THE overriding advantage of the original cost rate base seems to be the fact that it eliminates some of the judgment required. Since it is possible to calculate precisely the rate base using the original cost method, the rate of return is the only area calling for informed judgment. In both the fair value and reproduction cost theories, the regulatory agency may compound any error on rate of return through error in judgment in establishing the rate base.

"Original cost has the added advantage of being equitable both in times of inflation and in times of recession provided the regulatory agency is cognizant of the problems created by a period of inflation. Major criticisms of original cost rate base seem to be (1) insufficient rate of return allowed, and (2) failure to comprehend adequate depreciation reserves in time of inflation. If my belief is correct, it strikes me that these are criticisms of procedure rather than of the rate base concept. It is also true that those voices most loudly raised in criticisms of original cost today can be heard in the supporting chorus in times of extended recession or depression. . . .

"One procedure that is being attempted by more and more commissions in an attempt to counteract the effect of inflation is that of adopting a year-end or terminal rate base rather than utilizing the time-honored average rate base for the test year. The year-end rate base also helps counterract the effect of regulatory lag."

—ALAN S. BOYD,
Member, Florida Railroad and Public Utilities Commission.

On Rate Regulation

"SOME day the utilities will become aware of two basic facts. The first is that it is in their interest to do whatever is necessary to provide regulation with the best possible personnel and resources. The second is that somebody will develop a means of presenting a rate case so that the general public will understand the facts and the issues. In so far as the public is concerned, the presentation of a rate case today is no more clear than would be the presentation of a Greek drama in the original language."

—ALAN S. BOYD,
Member, Florida Railroad and Public Utilities Commission.

On Rate of Return

"THERE was a time when a 6 per cent rate of return was considered to be the maximum amount allowable for regulated utilities. The forces of inflation caused this wall to be breached. The regulatory agencies of many jurisdictions now do not hesitate to grant rates which will permit a return substantially in excess of 6 per cent. It is not uncommon to find rates of returns in excess of 7 per cent authorized for telephone utilities, which are generally felt to be more of a risk to the investor than electric utilities.

"Whether or not authorized rates of return have improved sufficiently to keep pace with inflation is a subject of continuing debate."

—ALAN S. BOYD,
Member, Florida Railroad and Public Utilities Commission.

On Refundable Bond Issues

"I HAVE on several occasions in recent years brought before regional gatherings of your organization the problems raised by nonrefundable debt issues. As the cost of debt money increases, these problems become more acute, since the chances of easier money rates in the foreseeable future increase.

"The policy of the Securities and Exchange Commission is against such indenture

provisions in the absence of some compelling reason. I have suggested to some of your members the desirability of a uniform policy in this regard since we feel that it is only by such uniformity that the position in this regard of a particular utility in search of new debt money can be made tenable. I repeat this suggestion today.

"The reverse trend of yields on common stocks as contrasted with debt or preferred securities seems to warrant a further analysis of the position of utility equity securities in this period of rising costs."

—EDWARD N. GADSBY,
Chairman, Securities and Exchange Commission.

On Regulatory Procedures

". . . There should be an elimination of all private attorney generals, a reaffirmation that the commissioners are the guardian-designees of the public interest, a restriction of the right to be heard in a contest for a privilege to only those parties who have a direct interest in the sought-for license or privilege, a cutoff date after which no new parties can become parties in interest excepting under the most compelling reasons directly endangering the public safety or welfare, a retention of the adjudicatory procedures for those cases designed to invoke legal sanctions, *e.g.*, revocation of licenses, reparation of rates, violation of law or rules, unfair trade practices, or other alleged infractions involving a determination of past conduct, provisions for a new or more flexible method to determine and apply agency policies as directed in the mandates from Congress, and determination of basic qualifications of applicants for the privilege to serve the public.

"What this country needs is a reassessment and rearrangement of its administrative procedural laws, not any further extension of procedural rights to those who should have no right to be in the case in the first place, nor to those who having that right are not, in fact, adversaries over property or vested rights, but merely contestants for a privilege, valuable or not to them, but essentially beneficial to the public."

—JOHN C. DOERFER,
Chairman, Federal Communications Commission.

On Regulatory Public Relations

"PUBLIC relations has attracted considerable attention in recent years from management officers in regulatory commissions. To some persons, the term public relations is synonymous with publicity. Although public relations does encompass the publicity sphere, publicity is merely one of its facets.

"The pattern of public relations, good or bad, is inextricably interwoven through the personnel fabric of any organization. It is the staff, rather than management officers, which creates the daily grist of either desirable or faulty public relations."

—*Report of the Secretarial Offices Committee, Edward T. Kaveny of Wisconsin, chairman.*

On Tax Legislation

"THE association now has a Special Committee on Repeal of Excise Taxes which was set up in 1957 to carry out the objectives of the association. The Committee on Legislation has worked for many years in an effort to completely repeal the excise taxes on transportation and communication services.

"This committee was pleased to learn that on June 29, 1959, the Senate and House passed a conference report on HR 7523, a bill to continue the present 52 per cent corporate tax which also contained a proviso that the 10 per cent tax on local telephone calls and one-half of the 10 per cent passenger travel tax would be added to the list of taxes automatically expiring on June 30, 1960. President Eisenhower signed the bill into law on June 30, 1959."

—*Report of the Committee on Legislation, H. Lester Hooker of Virginia, chairman.*

The March of Events

U. S. Leads in Electric Power

ALLEN S. KING, president of the Edison Electric Institute and also president of Northern States Power Company, stated on the eightieth anniversary of Thomas A. Edison's development of the first practical incandescent electric light that "the United States enjoys a perpetual and increasingly valuable 'birthday present' from Edison's achievement —world leadership in electric power."

King reported that the U. S. produces more power than the next seven countries combined and more than three times the generation of Russia, the second ranking power producer. He also said that although the Russians are vigorously developing electric power, the U. S. is actually increasing its lead. Premier Khrushchev set his country's goal of 108 million kilowatts by 1965. But by 1965, King stated, the U. S. should have 245 million kilowatts or 137 million kilowatts more than the Soviet Union.

Gas Rate Cases Increase

THE backlog of undecided natural gas rate increase cases involving interstate pipeline companies pending before the Federal Power Commission has increased by $123.5 million to an annual dollar volume of $335 million during the year ended June 30th.

FPC Chairman Jerome K. Kuykendall reported that the pipeline companies filed 48 rate increase proposals totaling $165,392,600 annually during the year. Only 33 had been filed in the previous year.

During the year the commission suspended 41 of the proposals filed which amounted to $162,162,000. A total of $3,230,400 yearly in increases was allowed in seven cases, including $3,203,400 in industrial rates which the commission does not have the authority to suspend.

There were actually 53 rate increases amounting to $211.5 million annually in suspension on July 1, 1958. During the ensuing year, ten cases involving $34,712,900 were concluded.

Low-price A-Power Predicted

WESTINGHOUSE ELECTRIC CORPORATION recently announced it can construct an all-nuclear power plant that will produce electricity at a cost of 7.3 mills a kilowatt, a price tag that for the first time puts the atom plant in a competitive position with plants using regular fuels.

The unit that could deliver such economic power would be a 330-megawatt, closed-cycle, water-moderated plant, the company said. Construction would total $68 million.

Although the cost of power production varies according to a utility's access to

such fossil fuels as coal, the 7.3-mill cost represents an economical figure in areas where the price of shipping in coal drives up power cost.

Among the 16 nuclear power plants in operation or under construction, the cost of producing electricity runs from 12 to 15 mills. The utilities involved in these projects thus far are more interested in obtaining production data on atomic plants than in manufacturing economical electric power through nuclear energy.

Citing the low cost on the 330-megawatt plant, Westinghouse engineers said:

> This makes it today's most advanced all-nuclear power plant with good short- and long-range economies. The plant also has a very promising long-range picture, but at the same time is attractive here and now. For the next half-century, this will in all probability be the most practical nuclear plant in the power industry.

California

Will Harness Steam Power

PACIFIC GAS AND ELECTRIC is building a 12,500-kilowatt pilot natural steam power plant at The Geysers, California. If this plant proves satisfactory and there is found to be enough steam in the ground to warrant it, PG&E may eventually operate a 100,000-kilowatt plant, from which it would send power to help supply the city of San Francisco, 100 miles to the southwest.

Thermal Power Company and Magma Power Company are the two small concerns which are gambling there is sufficient geothermal steam in the area to operate PG&E's power plant. The steam will be collected from about a dozen wells extending to an average of 800 feet into the earth. It will be then channeled into a 22-inch pipe, after which corrosive gases and foreign matter will be removed before the steam, at 348 degrees Fahrenheit and under 100 pounds pressure per square inch, will be sent directly into the plant's turbines to drive the generators.

If the plant proves successful, it is estimated that power will be produced for less than 6 mills compared to 6.5 mills that it now costs in PG&E's most efficient plant.

Colorado

Seeks Modification of Rate Cut

COLORADO INTERSTATE GAS COMPANY has asked the Federal Power Commission if it may cut its annual wholesale natural gas rates less than the amount required under a settlement approved by the commission last December.

At that time Colorado Interstate Gas asked the FPC for a rate cut amounting to $4.5 million, which is a 10 per cent decrease on an annual basis. The cut was to go into effect November 1st on sales to 14 wholesale customers in Colorado, Oklahoma, New Mexico, Texas, and Wyoming.

It all adds up to this: Colorado Interstate wants to go on collecting $6.5 million annually above the rate level approved by the FPC in settlement of three rate cases last December. The company's current rates are $11 million higher than those established by the settlement. Colorado Interstate has informed the FPC it will apply for authority to refund the reduced rates back to February, 1958, which would bring the total refund to $6.7 million.

Pennsylvania

Utility Tax Bill Passed

THE Pennsylvania senate has passed a bill which extends the 14-mill utility gross receipts tax to gas companies. Previously the house had passed the bill but it had included an exemption for municipally owned gas works. In the event the house accepts the changes effected by the senate and the bill becomes law, it would result in a $1 million a year rate boost for Philadelphia consumers. In addition to extending the levy to gas companies, the bill also provides that eight of the 14 mills be continued for another two years on a temporary basis.

The tax on gas companies would become effective January 1st if the bill is written into law.

PUC Seeks to Halt Gas Raises

THE state public utility commission is attempting to stem new rate increases for Pennsylvania natural gas consumers at the source. The action was disclosed by Leon Schwartz, commission chairman, in a talk before the seventy-first annual convention of the National Association of Railroad and Utilities Commissioners. Mr. Schwartz said the PUC wants the natural gas producers—the firms which own the wells from which the gas comes—to be compelled to justify any price increases for their product before the Federal Power Commission.

The way things stand now, according to Mr. Schwartz, gas importing states are almost helpless to prevent increasing rates to consumers. He pointed out that the owners of the wells increase the price of the gas they sell the pipelines. The pipelines in turn increase the price of the gas they sell to public utility firms—and then the public utility firms go before the PUC to seek rate increases to cover their increased cost. "Gas consumers are victims of arbitrary price fixing," Mr. Schwartz said. To halt or at least cut down this cycle of price increases, the Pennsylvania commission has come to the aid of two Philadelphia gas suppliers before the U. S. Supreme Court.

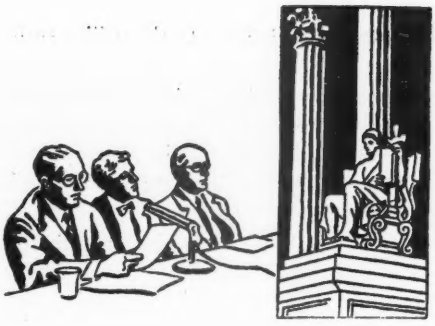
The two companies are asking the high court to permit them to go before the third circuit court, which recently ruled that well owners do not have to justify any increase in the price they ask for the gas they produce and sell to the pipeline firms.

Texas

Examiner OK's New Pipeline

RICHARD N. IVINS, examiner for the Federal Power Commission, has ruled that Transcontinental Gas Pipe Line Corporation of Houston, Texas, should be permitted to build new pipeline facilities estimated to cost $53 million. The new pipeline is designed to increase the capacity of the company's natural gas transmission system by 155,107,000 cubic feet per day. The new facilities would enable Transco to increase its firm deliveries of gas to 44 existing resale customers by a total of 138,589,000 cubic feet daily, and including an increase of its existing firm transportation service for Sun Oil Company, of Dallas, Texas, by 9 million cubic feet per day, to a total of 29 million cubic feet.

The decision also directs Transco to supply 7.4 million cubic feet per day to the Palmerton Gas Company, of Lehighton, Pennsylvania, which had intervened in the proceedings to obtain gas supply.



Progress of Regulation

Trends and Topics

Prohibitions against Submetering Electric and Gas Service at Residential Premises

SALES of gas or electricity by a public utility to a property owner who resells to tenants create a vacuum in the regulatory field. Residents of apartment houses buying utility service from unregulated landlords do not have the protection of commission regulation. Therefore, over a period of years, there has been a movement towards elimination of submetering to residential consumers, although some companies have in the past permitted submetering of service bought at wholesale.

One phase of this submetering question is discussed in PUBLIC UTILITIES FORTNIGHTLY, January 19, 1956, at page 129, particular attention being directed to the question of electric service to trailer parks.

New York Commission Moves to End Submetering

The New York commission on September 29th ordered Niagara Mohawk Power Corporation to discontinue supplying service to Adams Park Associates and to Elouise Apartments on December 31, 1959, unless prior to that date they shall have ceased to submeter electricity and gas to tenants. Adams Park Associates is a partnership operating a real estate development. The property consists of 180 individual two-story dwelling units in over 20 buildings. The buildings were built with the assistance of the federal government under the Federal Housing Act. At the time the development was constructed tariff provisions permitted submetering and resale of electricity and gas by a customer to his residential tenants under certain conditions. The original owners had installed a submetering system.

Elouise Apartments consists of a single multistory building housing 96 residential apartments, to which Niagara Mohawk furnishes both electric and gas service. Electric service is purchased by the management, while gas service is supplied directly to tenants. An examiner, reporting to the commission, said that upon elimination of submetering the management would have the choice of continuing to purchase all electricity through a single meter and including

the tenant use within the rent or turning these tenants over to the utility company so that they might be served directly.

The examiner said that to permit continuance of submetering would create a situation of unjust discrimination because it would have the effect of giving a privilege to such a customer which is not available to other Niagara Mohawk customers or to those of other utilities in the state. Re Niagara Mohawk Power Corp. Case 18703, September 29, 1959.

This order carries on the policy adopted in 1954, when the commission ordered that all gas and electric utilities which had not filed tariff provisions prohibiting submetering should file amendments to their tariff schedules prohibiting submetering, remetering, or resale of gas or electricity for residential purposes. The commission said that in a period of about twenty years it had received around 4,600 complaints in writing about such practices, with a still greater number of complaints being made by phone. The complaints covered many subjects—high bills, incorrect meters, and inability to receive the return of deposits. Frequently the submetering was not conducted by the landlord himself but was farmed out to someone else. Meters were used which would not be approved for use by a public utility.

It was noted that only in the territory of a minute minority of electric and gas customers was residential submetering still permitted. The commission said that the evidence clearly indicated that residential submetering served no useful purpose, that the practice brought with it certain inherent detriment to the consuming public, and that it was in the public interest to prohibit it throughout the state (3 PUR3d 58).

Commission Authority to Ban Practice

The authority of the New York commission to prohibit the practice of submetering was upheld in the Campo Corporation case (93 PUR NS 53, decision by appellate division of supreme court, upheld by court of appeals without opinion in 303 NY 995). The commission had conceded that it had no jurisdiction over the activities of submeterers. Therefore, there was a gap in regulation since the submeterer would act, in effect, as a public utility in selling current to tenants and yet be entirely free from regulation. A landlord had asserted that the owner of a building has the right to purchase electricity needed to light his entire building and that his private contracts with tenants for the disposal of current were no concern of the commission.

The court reached the conclusion that it was within the regulatory power of the commission to direct a public utility company not to furnish electric energy otherwise than direct to consumers and through company meters. Nor did encouragement by predecessors of this company of the practice of submetering, and tolerance thereof by the commission for some forty years, estop the latter from asserting its regulatory power. The landlords had no vested rights, constitutional or statutory, in the practice of submetering.

Illegal Competition by Landlord

The Massachusetts commission denied a petition by a company owning and

managing real estate properties for a supply of electricity from Boston Edison Company.

The commission expressed the opinion that resale of electricity by the real estate company to some users for less than they would pay at appropriate rates filed by the utility company constituted discrimination, and the commission had power to deny the application for service.

This real estate owner, the commission pointed out, competed with the utility company when it purchased current at wholesale and sold it to tenants and others at retail. The commission in this case said that the real estate owner, even though it did not use highways, was attempting to operate as a public utility although it had not complied with statutes relating to electric companies and contended that it was not subject to commission jurisdiction. The commission said that to compel the utility to furnish current under these circumstances would be equivalent to a condonation, if not approval, of the type of business carried on by the real estate company (70 PUR NS 161).

The Massachusetts supreme judicial court, after that decision, held that a statute authorizing the commission to order a supply of electricity in bulk did not give those engaged in reselling electricity purchased at wholesale rates a right to require that electricity be furnished them for resale in competition with the utility. The duty of furnishing electric service is owed to consumers and not to dealers. The court upheld the authority of the commission to order landlords to eliminate the practice of resale to tenants. The court further decided that real estate owners who had been engaged for a long period of time in the resale of electricity had no vested rights, constitutional or statutory, in the practice of submetering (15 PUR3d 47).

Other Rules Banning Submetering Upheld

The Delaware commission upheld rules of Delaware Power & Light Company prohibiting submetering. The commission decided that these were not unjust, unduly discriminatory, or unreasonable when they merely prohibited the middleman from collecting excessive rates from the ultimate consumers free of any commission restraint or regulation (11 PUR3d 226).

The New Jersey supreme court rendered one of the early opinions on the question of submetering of electricity when it upheld the commission's refusal to compel Public Service Electric & Gas Company to sell electricity at wholesale to The Sixty-seven South Munn, Inc., the owner of an apartment house. The court said that electric current in the aspect of sale and purchase is property, and it is possible for lawful restrictions to be imposed on its sale. Refusal by a public utility to sell electricity to an apartment house owner for the purpose of being remetered and resold to tenants was held not to violate the owner's constitutional property rights (PUR1929E 616).

The District of Columbia court of appeals decided that the commission could determine whether or not the Potomac Electric Power Company might reasonably decline to furnish service to owners of apartment houses, office buildings, or others who planned to remeter or submeter electricity so as to sell it at retail prices to others. A service rule approved by the commission under which the

company refused to furnish such service was held not to be unreasonable or arbitrary (PUR1933C 114).

Landlord's Unsuccessful Effort to Oust Utility

Owners of certain tenant occupancy buildings sued the Florida Power & Light Company to compel it to remove its individual electric and gas meters and to install, in place of such meters, master meters to register the aggregate quantity of electric current or gas supplied to all the tenants in the buildings owned by the complainants and to furnish service through master meters and charge the whole amount to the owners, leaving them to deal with the tenants.

The court said that it was not necessary to decide whether or not the power to regulate rates and services under the state laws would be broad enough to authorize regulation of submetered or resold service. In the case before it the sole question at issue was the right of the owners to compel the delivery to them of gas and electricity to be used as they might see fit, regardless of any reasonable regulations of the company to the contrary. The court decided against any such right. The court said it was entirely lawful for a public utility company, in the absence of a statute or franchise obligation to the contrary, to refuse to extend service to one who proposes to resell it in competition with the company, even though he might seek to obtain only the finished product delivered at his door (PUR1933E 157).

Review of Current Cases

Postcutoff Date Property Includable in Rate Base Where Use Imminent

THE South Dakota supreme court reversed a lower court judgment upholding a commission order (23 PUR3d 321) denying Northwestern Bell Telephone Company a rate increase. The commission was held to have exceeded its authority in not making an adjustment to include in the rate base the cost of replacing certain exchange property. Without inferring that the inclusion of this item would result in a different determination with respect to the adequacy of existing rates, the court remanded to the trial court with instructions to remand to the commission so that a supplemental finding could be made.

Adjustments after Cutoff Date

The company had contended that the commission erred in arbitrarily adopting December 31, 1957, as a cutoff date and in refusing to include the replacement property which had been placed in service in January, 1958.

The court first pointed out that the commission had not exceeded the bounds of legitimate discretion in fixing a cutoff date. The purpose of the cutoff date is to provide a time when plant, revenues, and expenses can be correlated. But although findings may be made primarily on test-year figures, the commission is not precluded from making pragmatic adjustments called for under the circumstances.

The use of the property in question at the end of the base year was imminent, said the court, and should have been included in the rate base unless factual rea-

sons warranted exclusion. For example, property under construction should not be included in the rate base if inclusion results in a double return because of additional revenue resulting therefrom, notwithstanding that the property has reached the point of imminent use. In this case, though, there had been no evidence that would justify exclusion in order to prevent a double return.

Date of Valuation

The commission had accepted, as correct for the test year 1957, the company's book cost of plant and equipment in intrastate service less depreciation reserve, plus materials and supplies and working capital. The commission did not calculate the rate base as of the end of the test year, but averaged the net investments at the beginning and at the end of that year, pointing out that it is the plant in service throughout the test year from which revenues are derived, and to reach a fair judgment of rates to be established or of existing rates, it is proper to relate earnings for the test year to an average rate base.

While the commission is not bound to follow any single formula or combination of formulae, said the court, it must appear that the method followed and its order fixing rates as applied to the facts and viewed in its entirety do not produce an unjust or arbitrary result. The commission, in using the book cost method, was not required to calculate the rate base as of the end of the test year and was not bound to follow its past practice of using a year-end rate base.

Casualty Expense

The company contended that casualty expense for the test year was abnormally low and should have been adjusted to the level expected in the future. The court refused to disturb the commission's rejection of this contention. The commission had found that casualty expense, like many other items, was properly included in the maintenance account, which could be expected to vary considerably from year to year.

However, variations in casualty expense did not appear to have any appreciable effect on total maintenance expense.

Rate of Return

The commission, in denying a rate increase, had found that the 5.8 per cent return being earned was reasonable. The company argued that the commission's treatment of the construction program had the effect of confiscation and was an attempt to dictate policy, that a substantial portion of the plant being added in the immediate future was for the purpose of replacing existing plant and would produce no additional revenue, and that as plant at high construction cost was added the increase in rate base was greater than that of earnings and the allowed rate of return could not be earned.

The court recognized the precedent that a regulatory agency has no power to dictate policy for a utility unless a situation develops which is inimical to the public interest. However, the commission had specifically disclaimed authority to substitute its judgment with respect to the extent of the company's construction program for that of management having the responsibility for the rendition of service to the public. The commission had acted upon evidence of additions and level of earnings for the years 1954 to 1956 and had properly concluded that continued normal growth in revenues under present rates would be sufficient to enable the company to add to its plant as necessity may reasonably require. The commission had anticipated reasonable future extensions

in the light of past experience and their probable effect on the rate of return.

The court could not say that the commission was bound to accept predictions of the company as to future earnings and the value of its plant on a date several months after the taking of testimony. If the level of return is not actually maintained and inequities result, the court pointed out, the company can make applications for change of rates at that time.

Scope of Review

It was pointed out that a court has no power to interfere with the commission's determinations so long as the legislative agency pursues its authority and does not transgress constitutional limitations. Within the broad field of legislative discretion implied in the rate-making power, the commission's determinations are conclusive.

The company had insisted that the circuit court failed to determine the law and the facts relating to the issue of confiscation and to apply its independent judicial judgment thereto. The court said that the trial court was not bound by the commission's conclusions as to any question of law and that its inherent power to determine constitutional questions could in no manner be impaired by a regulatory statute. But this did not give the company the right to submit evidence before the court and to have judicial findings based thereon.

Nor does the judicial duty to exercise an independent judgment require or justify disregard of the weight which could properly attach to the findings. On the contrary, the judicial duty is performed in the light of the proceedings already had and may be greatly facilitated by the assembling and analysis of the facts in the course of the legislative determination. Judicial judgment may be none the less appropriately independent because informed and aided by the sifting procedure of an expert legislative agency.

The established principle which guides the court in the exercise of its judgment on the entire case is that the complaining party carries the burden of making a convincing showing and that the court will not interfere with the exercise of the rate-making power unless confiscation is clearly established. The trial court had recognized that the legislature could not preclude scrutiny and determination by the court as to whether or not the rates prescribed by the commission were or would be in the immediate future confiscatory and had reached the conclusion that the commission acted within the permissible zone of reasonableness. *Re Northwestern Bell Teleph. Co. No. 9764, September 15, 1959.*

Rate Tilt and Uneconomic Branch Service Corrected In Authorization of Midwest Pipeline Expansion

PROPOSALS by Northern Natural Gas Company to provide natural gas service to 342 communities in six states in the Midwest won substantial approval from the Federal Power Commission. Existing and proposed utility customers, including Iron Ranges Natural Gas Company, which proposed an extension of facilities, will distribute the gas. Permian Basin Pipeline Company, El Paso Natural Gas Company, and Phillips Petroleum Company filed applications relating to Northern's supply. They were also substantially granted.

Northern proposed a northeasterly extension of its system to Duluth, Minnesota, and Superior, Wisconsin, designed to serve 39 communities. This part of the

project was estimated to cost about $26.5 million. The company also proposed an $88 million extension to serve 303 communities in Iowa, Minnesota, South Dakota, Nebraska, Wisconsin, and Illinois. Northern and El Paso have an exchange transportation agreement under which Permian Basin Pipeline Company will deliver into El Paso's system in Texas gas it sells to Northern, and El Paso will deliver an equal quantity of gas to Northern 200 miles further north. No question was raised as to the adequacy of the facilities to be constructed by Northern or of an extension proposed by Iron Ranges.

Iron Ranges' Dividends Restricted

Iron Ranges' proposed financing was not altogether satisfactory. Considering convertible notes as long-term debt, the company's debt would amount to 82.7 per cent of capitalization. Since this exceeded the commission's regular standard of 75 per cent, a condition was imposed to prevent the company from paying dividends on common stock until the notes are converted into preferred stock or the long-term debt is reduced to 75 per cent.

Deliverability Life

Northern's gas reserves amount to 12.6 trillion cubic feet, located in the Texas Panhandle, the Permian basin area, and the Hugoton field. Deliverability life is thirteen years. While the commission had some reservations about Northern's gas supply, it allowed the company's applications.

Economic Feasibility

Northern estimated that in the third year of service to the 342 communities, it would earn in excess of 6½ per cent rate of return on its entire system. A somewhat lower return was calculated on the incremental facilities to be constructed, though this return would be improved by the commission's requirement that certain uneconomic service be eliminated or that alternative contributions for construction be made by the distributors in communities where uneconomic service was desired.

In determining the economic feasibility of its proposed branch lines to numerous communities, Northern adopted the policy that a branch line should return sufficient revenues by the fifth year of service to pay for the cost of the gas in the field plus the out-of-pocket costs of transporting the gas to the town border stations, pay for the fixed and operating charges on the branch lines, and also contribute something to main-line cost of service.

The commission thought the feasibility of a branch line should be shown before a time so remote as the fifth year in order not to burden existing customers. Revenues in the third year, the commission held, should be sufficient to defray the cost of the gas delivered at the town border stations, cover the branch-line cost of service, and meet the cost of service of the measuring stations for each community. Where a branch line's revenues will not be sufficient on the third-year basis to meet the costs of the branch line and the measuring stations, service must be denied unless the distributors served by the branch line make an appropriate contribution to the cost of constructing these facilities. With such contributions in necessary cases, Northern's total investment would be reduced so that revenue would be sufficient at least to cover the out-of-pocket costs, the branch-line costs, and the measuring station costs, even if the service did not meet main-line costs.

Coal Interests Compete

It appeared that coal interests intend to compete strongly with Northern and Iron Ranges in supplying the fuel requirements of major industrial and utility plants at the head of Lake Superior, on the

Mesabi range, and elsewhere. The commission did not think such competition required a denial of certificates for natural gas service, though it did require that agreements between Iron Ranges and certain of its customers be made more firm.

Rate Tilt Adjusted

Northern proposed certain rates involving a shift of costs to the demand component. In general, said the commission, a heavily tilted rate is undesirable because it tends, if carried over to the retail level, to place an unduly high proportion of the costs on the low-load factor domestic and commercial consumers, rather than on the interruptible industrial consumers who do not pay a demand charge. However, in the case of certain market patterns, particularly where the company depends upon the interruptible industrial load, as here, to make its project economically feasible, some tilt may be necessary. But the burden is upon the company to prove the reasonableness of proposed rates. Rather than delay the project by turning this case into a rate proceeding, the commission decided to prescribe initial rates. Northern may file rate changes under § 4 of the Natural Gas Act, if it so desires.

Iron Ranges' rates, based upon Northern's proposed rates, were similarly modified. *Re Northern Nat. Gas Co. et al. Docket Nos. G-17485 et al. Opinion No. 324, July 31, 1959.*

Rehearing Denied

The Federal Power Commission denied rehearing of its order authorizing the Northern Natural pipeline expansion, though several modifications of the order were allowed. The rehearing application sought chiefly to show that the contributions required of branch-line distributors for uneconomic branch-line service would not meet the revenue deficiencies which would be incurred. The commission would not permit service that would endanger Northern's financial integrity or throw an undue burden upon communities already being served. On the other hand, each service rendered by a utility is not required to produce revenues equal to those derived from each other service.

The commission modified its contributions requirements so as to permit branch-line distributors at their election to construct so much of the branch line as would equal the amount of any required contribution. A contribution would not be includable in the distributor's rate base, while pipeline construction, on which a return could be earned, would be includable. Distributors were also permitted to make contributions at the commencement of construction, rather than within three months of the commission's original order. *Re Northern Nat. Gas Co. et al. Docket Nos. G-17485, G-17486, G-17874 et al. September 18, 1959.*

Gas Producer Prices Must Support Deep-level Production

In allowing a proposed initial price of 16.8 cents per Mcf for gas producer sales from the Knox field in Oklahoma to Lone Star Gas Company, the Federal Power Commission indicated that its primary criterion was the high cost of producing the gas from depths of 15,000 to 16,000 feet. To encourage and enable producers to explore for and develop gas from these deep formations, they must have the price necessary to support such production, said the commission.

While the proposed price, which includes tax reimbursement and a Btu con-

tent adjustment, is considerably higher than that paid by Lone Star for other gas supplies, the record showed that cost of drilling and developing at these depths is also considerably higher than for production at shallower levels.

Other factors besides the cost of deep-level operation influenced the commission. Unless Lone Star's purchase of this gas was certificated, the gas would probably be lost to interstate commerce. It further appeared that the purchaser's need for the gas was critical.

Finally, these sales of the gas would have little effect on Lone Star's prices. Certificates were, accordingly, granted to Lone Star and a number of producers of the gas. *Re Phillips Petroleum Co. et al. Docket Nos. G-17897 et al. September 18, 1959.*

City's Bid for Gas Supply for Condemned Distribution System Found Unfeasible

THE Federal Power Commission dismissed a complaint by the city of Bayard, Nebraska, seeking an order under § 7(a) of the Natural Gas Act to require North Central Gas Company to furnish the city a supply of gas upon the latter's condemnation and acquisition of North Central's local gas distribution system. The commission ruled that the city failed to prove that its project was economically feasible.

Before the condemnation proceeding, the city planned to undertake what it considered a necessary modernization of the system. After the condemnation award was made, resulting in a greater cost for the facilities than the city had anticipated, a policy of deferred maintenance was substituted for the modernization. The physical feasibility of the deferral was not shown.

With a static local population and a space-heating saturation of 90 per cent, the commission thought it unrealistic that the city should base the economic feasibility of its project on the assumption that the annual consumption would be 51 per cent greater than the average annual consumption over the last eight years. There was no evidence of an expected increase in consumption. Nor did revenue estimates give effect to an increase in operating expenses between 1955 and 1959.

Since the city was already receiving satisfactory service at rates over which the commission has jurisdiction, the commission found that the project was not economically feasible and was not necessary or desirable in the public interest. Ruling thus on the issue of feasibility, the commission expressly declined to pass upon the question of jurisdiction raised by the presiding examiner's granting of a motion to dismiss for lack of jurisdiction. *City of Bayard v. North Central Gas Co. Docket No. G-16434, September 24, 1959.*

Excessive Utility Purchase Price Measured by Book Value, Rate Base, and Income

THE Wisconsin commission found that a proposed purchase price of $300,000 for all the outstanding common stock of Central Wisconsin Gas Company was excessive and inconsistent with the public interest. It, therefore, refused to approve the purchase proposed by Winnebago Natural Gas Corporation. A further pro-

posal by the latter corporation to issue stock of its own in connection with the purchase was also denied.

Evidence indicated that the book value of Central's common stock was only $168,-262 at the end of 1958. The net book value rate base was only $260,843, or, with other nonrate base assets, $274,126. Clearly, said the commission, the rate base value does not support the proposed purchase price. Furthermore, Central has earned an income of only approximately $12,000 a year for the past five years, or about 4 per cent on the basis of the proposed purchase price of $300,000. Only by capitalizing future earnings could the applicant justify this purchase price.

The commission observed that the property base for security issue purposes should bear a close relationship to the rate base value. If securities were permitted to be issued to pay a purchase price based on capitalized earnings, such capitalized value would concomitantly be includable in a rate base. The circular reasoning involved in capitalizing earning power in a property base used to measure reasonable earnings is obvious, said the commission. *Re Winnebago Nat. Gas Corp. 2-SB-761, September 3, 1959.*

Specialized Motor Carrier Service Exempted from Rate Order on Favorable Operating Ratio

THE Connecticut commission granted in part an application by a motor carrier for exemption from the commission's recent rate stabilization order, with respect to the transportation of specified metal articles. The carrier alleged that its rates presently in effect afforded a reasonable profit.

The service sought to be exempted from the rate stabilization order consisted of two types of operations: an interplant operation and a shipper-to-customer operation. Two of the company's 13 trucks were used in these operations, and the company therefore charged 2/13 of its total expenses to the two operations, arriving at an operating ratio of 90.43.

The commission thought this apportionment of expenses was of questionable validity. Apportioning expenses on a revenue basis, and including a wage increase which the company had neglected to account for, the commission found that the operating ratio for these two operations was 95.84 per cent, the profit margin being largely attributable to the interplant service.

Since the latter service was a truly specialized service, conducted in full truckloads, existing rates were allowed to be retained. Other carriers conducting such specialized service were authorized to file for a similar exemption. However, the shipper-to-customer movement was found to be but an ordinary operation which the rate stabilization order was designed to cover. As to this movement, therefore, no exemption was granted. *Re Forest City Express Co. et al. Docket Nos. 9652, 9652-6, August 26, 1959.*

Contiguously Located City Not Included in Operating Rights

THE Alabama supreme court affirmed a court judgment holding that a motor carrier's certificate authorizing transportation between named cities did not in-

clude the right to transport into a larger city located contiguous to one of the named cities. The court pointed out that construction of a certificate is for the court and not for the commission, and that an Interstate Commerce Commission rule permitting service to points not on a regular route, but within one mile thereof, had no bearing on a state court's construction of an intrastate certificate.

Gadsden was the larger city, contiguously located to Attalla, the named city, in the certificate. Attalla has a population of 7,537 while Gadsden has a population of 55,725. It seemed obvious to the court that, if the commission had intended to authorize service within Gadsden, specific provision therefor would have been made in the certificate. The court saw no sound basis for construing the certificate as authorizing service within the corporate limits of Gadsden or within its police jurisdiction either because of its contiguous location to Attalla, or because the regular authorized route under the certificate penetrated Gadsden's police jurisdiction. *East Alabama Express, Inc. v. Baggett Transp. Co., Inc. et al. 113 So2d 495.*

Commission Authorizes Departure from Strict Accounting Rules on Transit Property Sale

THE District of Columbia commission has held that a transit company's sale of property to a redevelopment land agency, at a price far in excess of the original cost, justified a departure from the Uniform System of Accounts. The major bone of contention had been the method of accounting for the proceeds from the sale of the depreciable buildings, since both the commission's staff and the company had agreed that the difference between the original cost of the land and the selling price should be recognized as profit, and credited to earned surplus.

The staff had taken the position that strict compliance with the Uniform System of Accounts required all amounts received from the sale of depreciable property to be credited to the depreciation reserve as salvage. The company, on the other hand, claimed that the sale of depreciable property at an amount considerably in excess of original cost was such an unusual transaction that departure from the normal procedure was justified.

Extent of Departure

The commission agreed that a departure was justified, pointing out that it had never recognized the Uniform System of Accounts as an inflexible code from which departures in special or unusual circumstances would not be permitted. The fact that application of normal accounting procedures would have built the reserve for depreciation to a point where it would have contained approximately 80 per cent more than was necessary to retire 100 per cent of the original cost of the properties justified a departure from the Uniform System of Accounts, the commission concluded.

With respect to the extent of the departure, the commission adopted the alternate proposal which had been submitted by its staff. It directed that an amount equal to the original cost of the depreciable property sold be credited to the depreciation reserve, and the difference between this amount and the selling price be credited to earned surplus.

Such an approach, commented the commission, takes into consideration the right of the company to recover from customers, through depreciation, the loss of service value over the life of the property as meas-

ured by the original cost of the property less salvage realized upon retirement. Since the net salvage recovered upon retirement in this instance exceeded the original cost of the property, there was no actual retirement loss over its life.

Customers to Share in Gain

The commission was unable to disassociate the sale from the imminent retirement of all rail property under the mandate contained in the company's franchise, since the company was required by the franchise to convert from railway to bus operations over a seven-year period. The commission could not ignore the probability that full provision for depreciation would not have been provided when the rail facilities were abandoned and retired by reason of conversion. The company had consistently taken the position that any retirement loss in this connection should be recovered by charges against the customers. However, pointed out the commission, if the customers are to be required to bear the burden of extraordinary retirement losses incident to the whole conversion program, it appears equitable that they should share, at least to some extent, in extraordinary retirement gains such as the transaction under consideration in the instant case.

The company took the position that future losses on disposal of railway property might or might not occur and that known credits should not be used to offset future unknown charges. The commission agreed that extraordinary retirement losses resulting from the abandonment of railway property prior to the completion of normal service life could not be accurately determined at the present time. However, it regarded extraordinary retirement losses as belonging in the same category as track removal and repaving costs for which provision was presently being made as a charge against the ratepayers on an estimated basis over a 10-year period without objection by the company. In view of the virtual certainty of future extraordinary retirement losses in connection with conversion, the commission gave little weight to this contention.

Federal Income Tax

The company had received, in addition to the money for the land and the property, a sum for consequential damages to cover anticipated increased operating costs to be incurred by reason of relocating shops as well as the cost of moving machinery and equipment. The company, with respect to the accounting treatment accorded the accrual for federal income taxes related to the payment for consequential damages, advocated a method which would treat the tax as a direct charge to earned surplus with no effect on reported income for the year. Presumably the estimated costs, when incurred, would be charged against reserve and the related tax credit would flow through income with a corresponding increase in earned surplus. Thus, the initial charge against earned surplus would be balanced by the future credit. The commission rejected this method and adopted the staff suggestion instead. Under the staff plan, the reserve would be charged with the tax expense at the present time, to be offset later with the tax credit when the costs of moving and relocating are actually incurred. Net income, under the staff's method, would be unaffected either now or later, nor would earned surplus. *Re D. C. Transit System, Inc. PUC No. 3574/16, Order No. 4577, September 30, 1959.*

Municipal Electric Plant Rates Reduced

THE Wisconsin commission ordered a municipal electric plant to reduce rates to a level calculated to yield a return of 6 per cent on a book value rate base. Such a return was deemed fair and reasonable. The commission staff had introduced a balance sheet, an income statement, and a rate of return study, indicating that the company had been earning a return of 10.1 per cent over a 12-month period ending November 30, 1958.

Definition of Rural Customer

The commission also took action to eliminate confusion over interpretation of the plant's rule defining rural customers. It was noted that there had been a recurring problem with respect to urban rural rate classification for over ten years. The rule defined a rural customer as a purchaser of electric service who could be adequately served from one transformer of not more than 10 kilovolt-amps capacity, and who uses service in the conduct of one enterprise, occupation, or institution located outside a city or village or community with similar characteristics, at such a distance that it could not be adequately served from the secondary lines of the local distribution system.

In discussing the confusion resulting from interpretation of that rule, the commission referred to a typical complaint. It pointed out that until 1948 a certain farm was on the lower urban rates. This farm was located on the rural side of a highway serving as a boundary of the village.

In 1948 the plant superintendent wrote to the owner of the farm, stating that his residence was located outside the village limits and, therefore, this automatically made the farm owner a rural customer. Since that time the farm has been on the more expensive rural rate.

At present several residences and farms just over the village boundary are on the urban rate, although they are in rural territory, evidently because they could be adequately served from the village secondary lines of the local distribution system. On roads leading out of town this has led to the first few houses closest to the village boundary being classified urban. Since at some point the utility must "draw the line," it has classified the remainder as rural. This caused complaints.

To remedy this situation the commission provided for an extension of urban electric service to 1,000 feet from the village boundary. This would give the village urban rates to the majority of customers on the edge of the town, yet leave truly rural customers on the rural rate. *Re Village of Black Earth, 2-U-4692, August 18, 1959.*

Other Recent Rulings

Executives' Salaries. The Georgia commission commented that, while it had no authority to prescribe executives' salaries and expenses when they are deemed to be excessive, it must, when prescribing rates to meet the revenue requirements of a utility, give consideration only to a reasonable amount for such expenses to be included in the cost of service to be borne by the ratepayer. *Re Ellijay Teleph. Co. File No. 19381, Docket No. 1450-U, July 16, 1959.*

Telephone Stock Issue. The North Carolina commission authorized a telephone company to issue common stock to

finance the repayment of short-term bank loans which had been made to finance the company's expansion, conversion, and improvement program. *Re Western Carolina Teleph. Co. Docket P-58, Sub 32, September 4, 1959.*

Company Payment to Officer. The Georgia commission refused to authorize the issuance of stock by a telephone company to a company officer in partial payment for a switchboard purchased by the officer and later sold by him to the company; the only proper payment would be the amount paid by the officer for the equipment. *Re Walker County Teleph. Co. File No. 19395, Docket No. 1469-U, August 27, 1959.*

Debenture Convertibility. In authorizing an issue of negotiable convertible debentures, the Georgia commission imposed a condition so as to require disclosure in the body of the debentures that further action of the commission would be necessary for the authorization of stock, in order for the convertible feature to be exercised. *Re Consolidated Teleph. Co., Inc. File No. 19324, Docket No. 1456-U, August 6, 1959.*

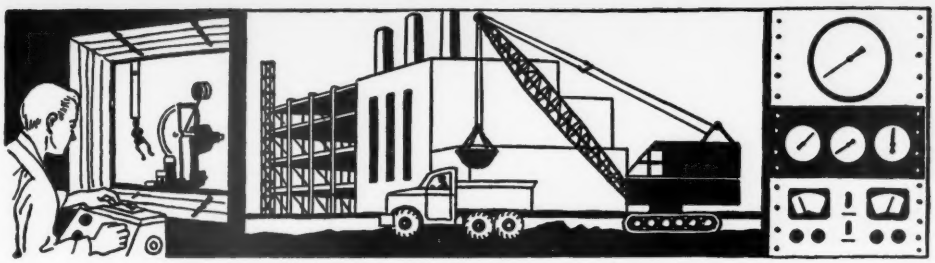
Rate Settlement Offer Approved. The Federal Power Commission approved a rate settlement offer, proposed by a natural gas producer and agreed to by all contract signatory parties, that in consideration for allowing a suspended rate of 14.6 cents per Mcf the producer would eliminate favored-nation and price-redetermination clauses from its rate schedule and would substitute two periodic increases for annual escalation provisions, since the settlement would obviate numerous rate filings and save time and effort for all concerned. *Re Champlin Oil & Refining Co. et al. Docket No. G-18166, July 31, 1959.*

Telephone Company Return. A return of 6.5 per cent on a telephone company's net book value rate base was considered reasonable by the Wisconsin commission. *Re Larsen Teleph. Co. 2-U-5194, August 13, 1959.*

Rate Increase to Offset Wage Increase. The Wisconsin commission granted a small telephone company a rate increase to offset an increase in wages granted employees. *Re Milltown Mut. Teleph. Co 2-U-5202, August 3, 1959.*

Not Proper Claim on Rates. The Wisconsin commission held that, in estimating a small telephone company's need for additional revenues, interest costs, debt principal payments, and dividends to common stockholders were not a proper claim on rates and should be deducted below the line of return. *Re Bonduel Teleph. Co. 2-U-5193, July 30, 1959.*

Exemption from Licensee Charges. Nonprofit sales or use of power by the New York Power Authority from the St. Lawrence power project were exempted by the Federal Power Commission from the annual charges under § 10 (e) of the Federal Power Act, but exemption was denied as to about 78 per cent of the project's generated power, which was sold for resale, where it was not shown that the purchaser sold it nonprofit to ultimate consumers. *Re New York Power Authority, Project No. 2000, August 3, 1959.*



Industrial Progress

ommonwealth Edison Raises 4-Year Spending Plans By $65 Million

MMONWEALTH Edison Com-y, Chicago, has announced a $65 ion increase in its estimated capi-spending for the four-year period 9-1962 to cover a larger-than-ned growth of capacity.

Edison now estimates its spending new construction during the four-r period at $625 million, up from 0 million, its previous estimate.

The upward modification was gered by the very high peak de-nds which occurred during the ex-ded hot spells in the latter part of gust and the early part of Septem-this year," said Willis Gale, chair-n. Despite the steel strike, a peak l of 4,233,000 kilowatts occurred gust 25th compared with previous k loads of 4,100,000 last Decem-and 3,904,000 in the summer of 8.

The company also announced it has ed orders for two big electric gen-ting units totaling 805,000 kilo-ts of capacity. These units, espe-lly one, a 305,000-kilowatt unit ich was not planned earlier this r, were major factors necessitating sharp increase in the company's struction program.

General Electric Company has n awarded the contract for one of new units, a 500,000-kilowatt in-llation at the utility's Will county ion near Lemon, Ill. The cost of turbine generator, boiler, electrical ipment and buildings for this unit estimated at about $43,000,000. is 500,000-kilowatt unit is larger n any generating unit now operat-in the United States, although ers of this size, and larger, are un-construction.

Westinghouse Electric Company been awarded the contract for the ond unit. This generating unit, with a 305,000-kilowatt capability, will be constructed at Edison's State Line station on Lake Michigan and the Illinois-Indiana boundary.

The 500,000-kilowatt unit is scheduled for completion in 1963 and the smaller unit is expected to be on the company's lines in 1962.

In 1963, the system's net generating capability, after allowance for the retirement of older equipment, is expected to be 6,463,000 kilowatts or nearly treble the total at the end of World War II. The company's generating capability is now 5,021,000 kilowatts up from 4,396,000 kilowatts at year-end 1958.

In revising its spending estimates, Edison lowered its 1959 spending forecasts for the three years 1960 through 1962 by $75 million.

American Gas Association Increases Research Budget

THE research budget of the American Gas Association will be raised $700,000 in 1960 with the aim that by 1965 $6,000,000 annually will go into research, the newly-appointed Chairman of AGA's General Research Planning Committee disclosed recently.

Fred W. Batten, vice-president of the Columbia Gas System Service Corporation, New York, addressed the recent session of the Pacific Coast Gas Association convention in his capacity of committee chairman.

Linking research directly to competitive goals, Mr. Batten said that "on the march are the fuel cell and thermo-electric generation—the most exciting field of which I know. With the magic of making cold from heat and generating electricity directly, we shall be entirely independent of competitive sources of energy."

He cited the development of a miniature model gas furnace which generates its own electricity to power the air circulating fan—"a device that one day could divorce gas heating equipment from any reliance on electric power."

Research activities of the AGA are conducted at or in coöperation with 18 different institutes, research organizations, government bureaus, manufacturers and universities. As a result of this activity, 18 patents have been granted by the Federal Government and 9 others have been applied for.

Some of the developments growing out of the gas industry's research program, Mr. Batten said, include improved pipeline operation; the needle pilot light and high input burners; a faster commercial deck oven; and gas air conditioning.

Future research, he said, will bring such other developments as improved combination heating and cooling equipment and improved leak detection and repair.

Mr. Batten said the impact of the industry's research was "double barrelled" since it produced not only material advancement for the industry but also attracted attention in other industries "which frequently has resulted in their also undertaking research."

(*Continued on page* 20)

PRESIDENT

Our client seeks top management executive for position of president and chief executive officer of major company in a regulated industry.

This man should be:

- **Age 40 to 45**
- **Experienced in financial negotiations and preferably with some exposure to governmental regulatory problems.**
- **An executive with proven administrative and organization ability, presently earning over $30,000.**
- **Service oriented, civic minded.**

All replies treated in strict confidence.

BOX 115
PUBLIC UTILITIES FORTNIGHTLY
332 Pennsylvania Bldg., Washington 4, D. C.

"Another important effect, though less tangible," he said, "is the impact of research on the financial fraternity. The fact that we, as an industry, are doing effective research improves the stature of the industry in their eyes."

Noting that competitive fuels have been increasing their research spending in recent years, Mr. Batten stated that "we know that our efforts have had an effect on our competitors."

The AGA Committee chairman cited a report of the Battele Memorial Institute of Columbus, O., that stated that AGA "through its research activities, has met recognized needs of an industry growing through extension of services," and that its research program, within budgetary limits "has been sound and imaginative."

Model 295 Payscraper Catalog

THE new International Model 295 Payscraper is the subject of a 24-page, two-color catalog just released by International Harvester Company.

With a 34-yard heaped capacity, the unit is powered by the International DT-817 turbocharged engine, developing 375 horsepower at 2,100 rpm.

The Model 295 Payscraper offers speeds up to 33.5 mph, advanced lift frame construction, exclusive tapered bowl design, 131-inch cutting width, new 98-inch opening with positive ejection and simplified design which cuts service time.

The catalog is available from International construction equipment distributors, or from International Harvester Company, 180 North M igan avenue, Chicago 1, Ill.

Bulletin Describes High Capacity Aluminumcase Me

BULLETIN 314, just publishe American Meter Company, pro complete information on the rec introduced American AL-800 minumcase Meter. Compact and in weight, the AL-800 Aluminum Meter has ample capacity for me sized commercial or industrial l Rated capacity is 800 cubic feet hour at ½-inch differential and cubic feet per hour at 2-inch diffe tial with 0.64 specific gravity gas

Copies of Bulletin 314 can be tained from Advertising Departm

This announcement is not an offer to sell or a solicitation of an offer to buy these securities. The offering is made only by the Prospectus.

$25,000,000

The Columbia Gas System, Inc.

5⅜% Debentures, Series N Due 1984

Dated October 1, 1959 — Due October 1, 1984

Price 100% and accrued interest

The Prospectus may be obtained in any State in which this announcement is circulated from only such of the undersigned and other dealers as may lawfully offer these securities in such State.

HALSEY, STUART & CO. INC.

AMERICAN SECURITIES CORPORATION — BEAR, STEARNS & CO.

DICK & MERLE-SMITH — HALLGARTEN & CO. — L. F. ROTHSCHILD & CO.

SCHOELLKOPF, HUTTON & POMEROY, INC.

TUCKER, ANTHONY & R. L. DAY — WEEDEN & CO. INCORPORATED — BACHE & CO.

BURNS BROS. & DENTON, INC. — R. S. DICKSON & COMPANY INCORPORATED — HIRSCH & CO.

NEW YORK HANSEATIC CORPORATION — SHEARSON, HAMMILL & CO.

F. S. SMITHERS & CO. — STROUD & COMPANY INCORPORATED — BALL, BURGE & KRAUS

BAXTER & COMPANY — BLAIR & CO. INCORPORATED — J. C. BRADFORD & CO.

COURTS & CO. — GREGORY & SONS — WM. E. POLLOCK & CO., INC.

AUCHINCLOSS, PARKER & REDPATH — J. BARTH & CO. — IRA HAUPT & CO.

STERN BROTHERS & CO. — VAN ALSTYNE, NOEL & CO.

October 9, 1959.

Payne avenue, Erie 6, Pennsyl-

Cabe-Powers Announces New Hydraulic Derrick

ABE-POWERS Body Com-, St. Louis, Mo., has announced ddition of an all-new oscillating aulic derrick to its line of "Pole-er" fully-powered derricks.

he new unit, designated the Se-PM-30 "Pole-Master," has a ver- operating arc of more than 200 ees—extending from stowed posi- above the body to just above the nd. Head sheave can be spotted ny point in this arc.

addition to its vertical move-, the PM-30 "adds a new time-ng dimension to derrick opera-" It can be moved horizontally, ny angle of elevation, to any point 180-degree arc which reaches one side of the body to the other. The new PM-30 saves time on y job," stated Brooke Daly, com- vice president, "because it can potted quickly without maneuver- the truck into a specific position each derrick operation."

he derrick's wide range of hori- al and vertical movement permits king in places where limited space ld prevent the use of conventional le-arc derricks. It is ideal for use lleys and narrow streets. In con- ed areas, truck can be parked llel to the curb, for handling the plete pole-setting job without king traffic.

ts extreme versatility enables the -30 to handle the entire construc- and maintenance operation with maller crew," according to Mr. .

escriptive literature and price in- mation can be obtained from Mc- e-Powers Body Company, 5900 th Broadway, St. Louis 15, Mis- ri.

w Electronic Business Machine Can Cut Record-Keeping Time Two-thirds

E National Cash Register Com- y recently unveiled a new elec- ic accounting machine which, ac- ding to an announcement can fig- a weekly payroll or prepare cus- ers' bills in one third the time pre- usly required.

alled the Compu-Tronic, the desk- machine can also compute real te taxes, mortgage interest, con- ction costs, and handle a wide va- y of other accounting jobs requir- ing extensive calculations.

"The Compu-Tronic was developed to meet the need for low-cost electronics in the office," Stanley C. Allyn, NCR board chairman said. "It combines in a single unit the functions of the conventional office calculator, adding machine and accounting machine."

Mr. Allyn said the company had received more than $2,000,000 in advance orders for the equipment which sells for $18,000 to $18,750.

The Compu-Tronic can multiply king-size numbers in a fraction of a second. For example, the multiplication of 9,999,999,999 by .99999 requires less than a third of a second. A standard calculator, on the other hand, requires about five seconds, or 15 times as long, to do the same problem.

According to the announcement, the Compu-Tronic can be used by virtually all types of commercial and industrial concerns as well as financial institutions and various government bureaus. It can be shifted from one job to another in a few seconds' time.

Using the new machine, a single person can prepare complete payroll records for 500 employees in a single day—a job that in most cases involves about 3,500 separate calculations and the production of 2,500 different records.

G-E Terms High-Speed Digital Computer a Basic Tool

THE high speed digital computer will become a basic tool for all electric power generation economic studies, General Electric engineers told the recent National Power Conference.

Whether the studies are of peaking, base load, steam, nuclear, or gas turbine units, the four engineers predicted that use of the digital computer will accurately and economically determine potential savings offered by different generation expansion plans.

The conference paper was presented by C. D. Galloway, Dr. L. K. Kirchmayer, W. D. Marsh and A. G. Mellor, all of General Electric's Utility Engineering section in Schenectady, N. Y. All are members of American Institute of Electrical Engineers.

As the result of their use of a digital computer in their study of typical problems, the engineers came to the conclusion that to obtain optimum system design it is necessary to recognize the potential savings to be achieved by use of low-first-cost peaking generation such as gas turbines.

The paper cited the increased attention being given by the electric utility industry to the problem of determining the most economical method of providing generation for the peak portion of the utility load. The utility industry has always been faced with the problem of economically providing generating capacity to meet the relatively short-time high-peak loads on their systems. Commonly the greatest part of the peak load has been carried by the older steam-electric generating units.

These conditions have been changed by the more difficult and expensive problems of improving efficiency of steam-generating units and by the possibility of using new forms of thermal generation to lower the installed cost per kilowatt although at some sacrifice in fuel cost per kilowatt-hour.

The paper points out that these changing conditions make it necessary to reappraise power system generation expansion patterns to determine what over-all savings can be achieved by installing some small percentage of generating capacity in low first cost, relatively low-efficiency generation intended to operate only a few hours per year in peaking service.

This makes it necessary to study total system costs over a period of system expansion that is sufficiently long to determine the over-all economy of one or other of the alternate expansion patterns.

The engineers found that the digital computer also may be applied readily to analyze such problems as the value of improved efficiency of base load steam units; value of changes in shape of heat rate curve; system economics to be achieved by pumped storage plants and the optimum integration of nuclear plants into a system.

(*Continued on page 22*)

ELECTRIC UTILITY DIVISION VICE PRESIDENT

Major electric utility company has an opening for an operating executive to fill the position of Division Vice President. This key management position will encompass full responsibility for company operations and development activities in a relatively large geographical region which has substantial growth opportunities. The position requires a college graduate, engineering degree preferred; age 35 to 45; a personality geared to a service operation; strong administrative ability; and operating managerial experience. Previous experience in a service organization involving contact with governmental controls is desirable.

In replying please include complete resume. All replies will be kept confidential.

BOX 110

PUBLIC UTILITIES FORTNIGHTLY
332 Pennsylvania Bldg.,
Washington 4, D. C.

Is Your Company "Keeping Pace?"

From 1945 to 1958 annual operating revenues of electric and gas utilities rose over 200%. Maintaining an efficient organization in the face of this increasing volume has placed a strain on many companies. Top management has often been so busy with day-to-day operations that insufficient time has been left to prepare men for growth needs.

Even with available time, it is difficult for a company's officers to study their own operations objectively. Commonwealth's Industrial Relations consultants offer this much needed objectivity. They can bring broad experience in many fields to your Organization Planning, Management Development and Labor Relations needs.

In serving you, our Industrial Relations Department is backed by a diversified management consulting and engineering staff of over 750 people. Your inquiries are invited.

Commonwealth

SERVICES INC. ASSOCIATES INC.

Management and Business Consultants
Consulting and Design Engineers

NEW YORK 22, N. Y., 300 Park Ave.
HOUSTON 2, TEXAS, M&M Building
JACKSON, MICHIGAN, 209 E. Washington Ave.
WASHINGTON 6, D. C., 1612 K Street, N.W.

New Safety Device Protects Mammoth Offshore Drilling Platforms

A SIMPLE but ingenious safety device has been veloped by a Texas firm to provide night-and-day tection to the mammoth offshore drilling platform manufactures.

R. G. LeTourneau, Inc. of Longview, Texas, has livered nine of the three-legged "portable platfor for which the new safety device is designed. Each form has meant an investment of between $1-mi and $4-million to the purchaser, and some have weig as much as 4,000 tons.

This latest safety innovation consists of a self-le ing mechanism to control each leg individually, acc ing to R. L. LeTourneau, vice president.

If faulty ocean bottom causes the platform to the self-leveling system snaps into action automatic so that the platform can be brought into perfect h zontal position again.

Mr. LeTourneau said the innovation will prove uable in many respects. "It will protect any electric powered platform before developing a serious list w could possibly result in catastrophic consequences. equally important," he added, "it will permit contin stability which is of critical importance during any drilling operation."

For additional information on mobile offshore forms, write to R. G. LeTourneau, Inc., 2399 S MacArthur, Longview, Texas.

Utilities Hear Plans for Nationwide Appliance Promotion Led by Newspapers

UTILITY companies in many areas of the Un States and Canada are expected to participate in a tionwide appliance promotion originated by the ne paper industry and spearheaded by the Bureau Advertising of the American Newspaper Publish Association, representatives of some 50 utilities in Midwest were told recently.

Speaking before a regional meeting of the Pu Utilities Advertising Association in St. Louis, M. Batterton, central manager of the Bureau, said sev hundred daily newspapers are already organizing campaign in their communities and that the promot is being supported strongly by the appliance indus Manufacturers, associations, retail chains and other ments in the field, he disclosed, have expressed c fidence that the project will provide a strong stimu to sales of their products.

The promotion, "Make Your Home Happier Wit New Appliance," will take place November 9th thro 21st.

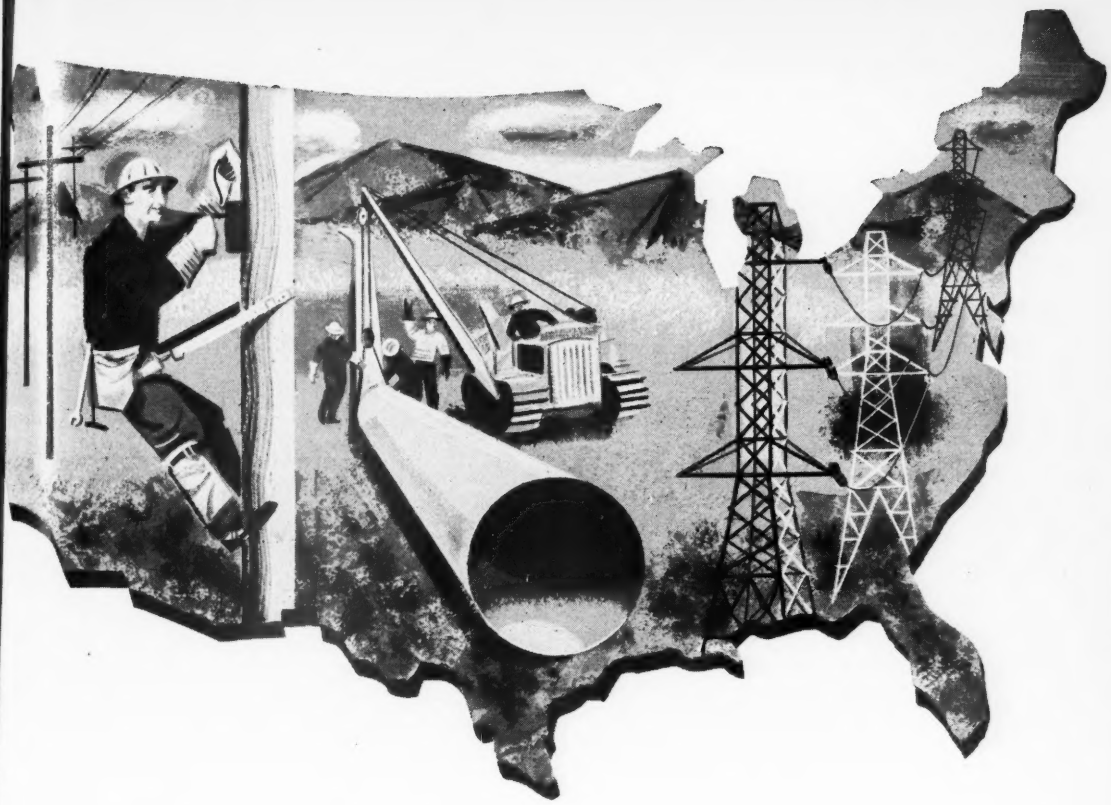
Complete kits of advertising layouts and promot ideas have been provided by the Bureau for the pliance promotion and it is expected that many th sands of ads and display pieces by appliance deal will carry the theme line.

H. K. Porter Company, Inc. Acquires Hill Transformer

AS another step in its Western expansion H. K. Por Company, Inc., has acquired Hill Transformer C poration, San Carlos, California, it was announced cently by C. L. Holbert, president of Porter.

Hill will thus become the sixth Porter manufact ing facility in the eleven Western states, Mr. Holb

(Continued on page 24)



Lifelines of the nation!

Playing a dynamic role in the economy of our nation, the investor-owned Utility Industry continues to expand its lifelines of service. Not only meeting the needs of today's consumers, but preparing also for an atomic age, Utilities are faced with enormous capital expansion requirements.

To assist in the many financial complexities accompanying this growth, Irving specialists are ready with new and sound approaches. Our Analytical Studies, Seminars, and Round Tables, may bring added vitality to your capital planning, financing, or cultivation of the financial community.

For more information, call Public Utilities Department at DIgby 4-3500
or write us at One Wall Street

IRVING TRUST COMPANY

One Wall Street, New York 15, N.Y.

Capital Funds over $135,000,000 — *Total Assets over $1,600,000,000*

RICHARD H. WEST, *Chairman of the Board* — GEORGE A. MURPHY, *President*

Public Utilities Department—JOHN F. CHILDS, *Vice President in Charge*

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

said, and will bring to a total of 52 the plants operated by Porter in the United States, Canada and Mexico.

As a Porter operation, Hill Transformer will continue to manufacture its line of dry type and liquid immersed distribution transformers and power transformers for utility and industrial applications. This will provide production in the West and improved Western service to supplement the distribution transformer line now being manufactured by the company's Delta-Star Electric Division, which is well known in the utility industry as a supplier of power switching equipment, substations, lightning arresters, and high voltage insulators.

Max Hill, founder and president of Hill Transformer Corporation, will continue to manage the San Carlos operation.

Federal Pacific Issues New Brochure On Instrument and Relay Division

BULLETIN FB-IR, a four-page brochure describing the new facilities of Federal Pacific Electric Co.'s recently established Instrument and Relay Division in Newark, has issued by the company.

Every phase of the instrume relay operation—from engin and research to manufacturin sembly, and testing—is descri detail by means of text and p

Copies may be obtained from eral Pacific Electric Co., Fifty nue L, Newark 1, New Jerse

Small IBM Computer Perf Over 100,000 Calculation Minute

A SMALL, transistorized, sci computer which can perform than 100,000 calculations a m was announced recently by the Processing Division of Interna Business Machines Corporation.

Requiring little more space the average desk or drafting tabl new IBM 1620 Data Processing tem operates under the direction internally stored program of ins tions. It can perform complex neering and scientific computatio a continuous or production basis. 1620 is particularly adaptable to lems such as highway cut-and-fil bridge design, oil pipeline tran sion and product inventory, petro blend evaluation, lens design, power requirements analysis for ties.

Advanced features incorporate this compact but powerful com include 20,000 digits of magnetic storage with variable field length immediate accessibility, and p tape and electric typewriter input output. The availability of two vanced programming systems a comprehensive library of mathe ical and statistical routines simp programming for the 1620. Sp programs for the petroleum indu public utilities, civil engineering, optical firms will be available.

"The 1620 was developed to m the technological need for a com computer with the operating capa ties of much larger systems," Gilbert E. Jones, general manage IBM's Data Processing Divis "With its 20,000 digit core mem high-speed operation, and adva programming systems, it is the m powerful computer in its price c ever offered on a commercial ba

The 1620 will be manufacture the IBM plant in San Jose, Cali nia. The first systems are expecte be delivered late next year. The tem will rent for $1,600 a month, sell for $74,500.

This advertisement is neither an offer to sell nor a solicitation of offers to buy any of these securities. The offering is made only by the Prospectus.

NEW ISSUE

October 15, 1959

1,200,000 Shares

American Electric Power Company, Inc.

Common Stock

(Par value $10 per share)

Price $48 per share

Copies of the Prospectus may be obtained from any of the several underwriters, including the undersigned, only in States in which such underwriters are qualified to act as dealers in securities and in which the Prospectus may legally be distributed.

The First Boston Corporation — Eastman Dillon, Union Securities & Co.

Drexel & Co. — Glore, Forgan & Co. — Hornblower & Weeks

Kidder, Peabody & Co. — Ladenburg, Thalmann & Co.

Carl M. Loeb, Rhoades & Co. — Merrill Lynch, Pierce, Fenner & Smith Incorporated

Rust Installing Shielding For Reactor Vessel

E Rust Engineering Company, sburgh, Pa., has started the in-lation of graphite shielding be-en the reactor vessel and the 24' meter by 40' high primary shield at the Enrico Fermi Atomic wer Plant. The construction work, mated at $95,000, is being handled Rust's Chimney and Refractory ckwork Department.

The Enrico Fermi Atomic Power nt, located 30 miles southwest of troit, is scheduled for initial nu-ar operation in late 1960. Power actor Development Company is nstructing the reactor portion of this plant and the turbine electric portion is being built by the Detroit Edison Company.

New Device to Improve Party Line Ringing

A TRANSISTORIZED ringing generator that "may be the proper approach" to an ideal source of voltage for party line telephones was described at the American Institute of Engineers meeting in Chicago.

One of these generators has been installed on a field trial in a location where there are 4,000 telephones and has been giving trouble-free performance for 20 months, it was said in a paper, Transistorized Multi-Frequency Ringing Generator, presented at a wire communication systems symposium during the Fall General Meeting of the American Institute of Electrical Engineers.

The authors, J. F. Kostelich and B. W. Howard, of Lorain Products Corp., Lorain, Ohio, said that "Conservative electrical design regarding component ratings indicates that many years of trouble-free performance under normal operating conditions can be anticipated."

The frequencies of this generator can be set precisely with a screwdriver, its harmonic content averages 5.2% which is not enough to cause cross ring difficulty.

This announcement is not an offer to sell or a solicitation of an offer to buy these securities. The offering is made only by the Prospectus.

$70,000,000

Southern Bell Telephone and Telegraph Company

Thirty-Five Year 5½% Debentures

Dated October 1, 1959 — Due October 1, 1994

Price 102.36% and accrued interest

The Prospectus may be obtained in any State in which this announcement is circulated from only such of the undersigned and other dealers as may lawfully offer these securities in such State.

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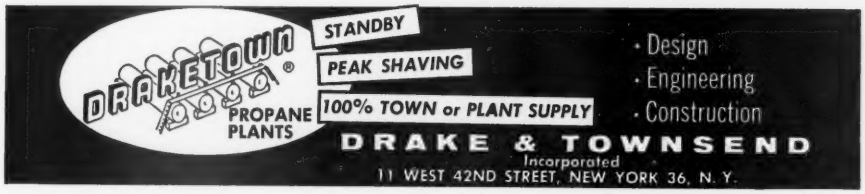

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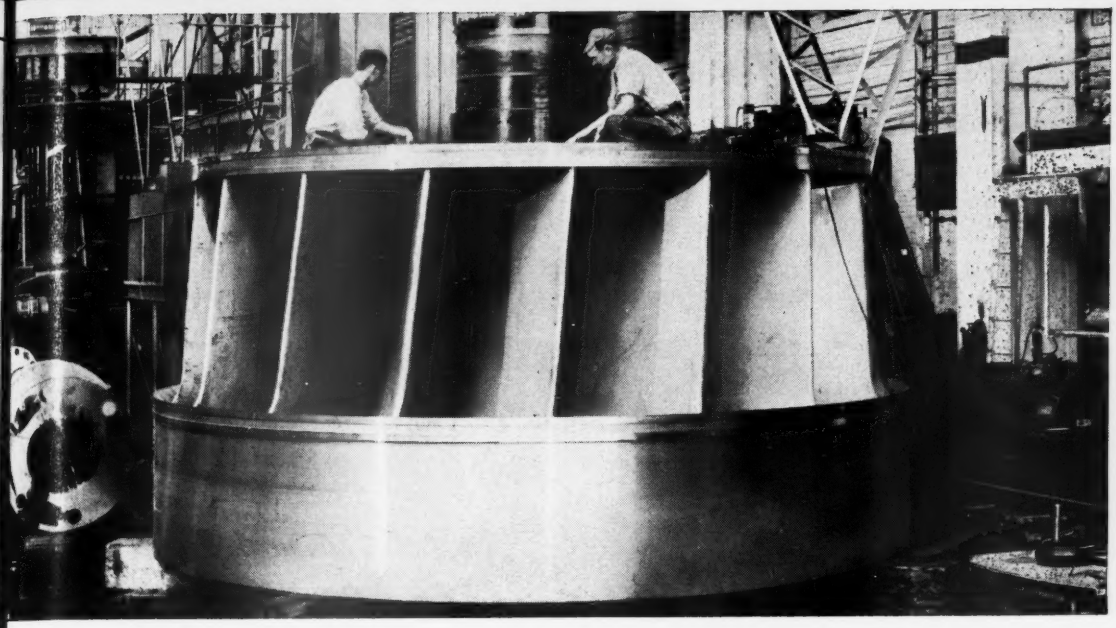

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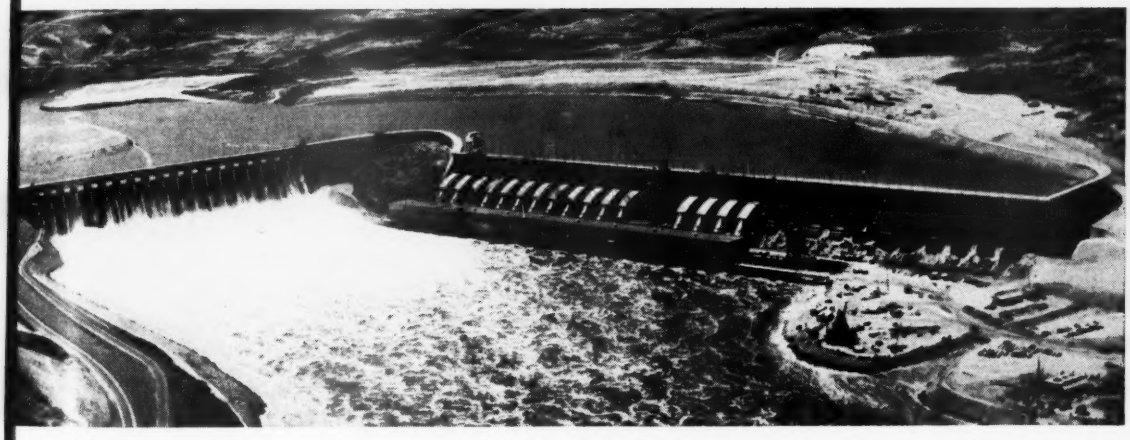

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J. W. Seaman, General Manager,
Power Transformer Department,
answers some questions on . . .

• New concepts in the power transformer business
• Benefits for utilities

Q. ***Mr. Seaman, what is General Electric doing to make progress in power transformers pay off for utilities?***

A. Quite a bit. Right now we are announcing an important extension of our Preferred Design transformer line that will bring many outstanding benefits to electric utilities.

Q. ***What are the major features of this new G-E PD Transformer Program?***

A. Actually, they begin with a new way of doing business . . . and a new approach to developing and producing power transformers. Let me explain. For some years now, our greatest challenge has been to find a solution to the seemingly always-rising labor and material costs. A partial solution to this problem was effected in 1957 when Preferred Design transformers were introduced. Using a 705 computer, we made an embryo attempt to introduce product uniformities into units rated up to 50 mva and 138 kv. With this start, techniques of more mechanization, sub-assembly work, and repetitive operations were utilized.

Now, we go a step further. Inflationary trends, still with us, dictated the need for further efforts—a new business approach.

Q. ***How would you explain General Electric's new business approach on power transformers?***

A. Simply this. General Electric has extensive engineering and manufacturing skill. However, because of the tradition of making custom-built or individually tailored transformers, our major advances have largely been limited to engineering accomplishments. Our new goal was to develop a concept whereby our latent manufacturing abilities could be applied to power transformers.

To do this, we have extended our Preferred Design program to include units rated as high as 250,000 kva and 230 kv. We have developed three styles of transformers for the three major application areas, i.e., large substation, transmission-tie and generator step-up units.

The uniform mechanical features and accessories for each type are truly utility-preferred because of our extensive product planning efforts to determine what the *industry* wanted. With these uniformities in our products, we are able for the first time to apply G.E.'s full manufacturing knowledge to power transformers. And, because of our computer, we are still able to offer complete electrical design flexibility to best meet specific requirements within each application area.

Q. ***How about those utility benefits?***

A. G-E power transformer users will benefit because our new concept has to, and does 1) combat the inflationary trend and protect or improve purchasing power, 2) reflect customer-preferred features and practices, and 3) simplify our product.

Q. ***Can you give some examples of that "product simplification"?***

A. Obviously, the uniform mechanical features and accessories are one example. Another is that for years we built different tanks, depending upon cooling method required. We have now relegated cooling to its proper place as an accessory where it does not interfere with our basic attempt to get optimum transformation. Cooling packages are now always placed at the end of the new tank which is suitable for all types of coolers. It isn't until the cooling equipment is to be attached that our assembly people must know which cooling method is specified.

The advantages of building essentially one type of tank are, I believe, readily apparent.

Q. ***What are the "pay-offs"?***

A. In the short range, operating people will see many new and better items in power transformers, such as ease in uprating, better coolers, easier installation, 40 percent faster deliveries, and others. Utility engineering people will be aided because our PD program permits valuable data on large units to be published for estimating and planning purposes. And, we can also supply, with our propositions, drawings that are approved for construction purposes—final planning or substation design can begin immediately after an order is placed for a G-E unit.

Purchasing people will, I am sure, appreciate the addition of many features which formerly had to be specified. Now standard, these save dollars and some detailing work. Also, our progress to date in the areas just described permits us to realign our published prices which, averaging the few increases with the many decreases, will mean an over 5% downward adjustment for the entire line. To utility management people particularly, we further state that this program should permit us to make effective manufacturing economies. If the utility industry then provides volume support and if inflation continues at the current rate, net published prices which haven't been increased since mid-1957 should remain near their present levels for at least the next several years.

Q. ***This sounds like every utility may connected with the purchase of use of power transformers could profitably explore these advantages. How about further information?***

A. Our General Electric Sales Engineers have full information. They or the local G-E Apparatus Sales Offices, should be contacted 301-40

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